From: Southerland, Elizabeth
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM
od-meetingrequest.Steam Electric ELG_Colin Enssle.docx_06_24_15.docx

PLEASE CUT AND PASTE INTO THE BODY OF AN EMAIL—DO NOT PRINT A HARD COPY!

OD & DOD MEETING REQUEST FORM

Briefing

1. Please schedule for
   OD? __X__
   DOD? _____

2. Suggested title for the Subject line of the meeting

   Anti-circumvention provision in the proposed steam-electric ELGs

3. Purpose of the meeting

- Request for a meeting between EPA and GE regarding the proposed ELGs for the steam electric power generating industry. In particular, GE has a discrete but operation-critical issue regarding application of the anti-circumvention provision in the proposed rule.
- The concern is around the operation of Homer City Generating Station and the reuse/recycling of wastewater streams internally when there will be no discharge to the environment. Homer City, in its public comments submitted on September 20, 2013, discussed the issue in general (starting page 6, attached document). In addition, we reference the specific language in TVA's comments that discusses how the proposed anti-circumvention language is in conflict with the reuse scenario that Homer City is contemplating. The document link is below, and the language is on page 17: "The proposed ELG condition of having to meet limits prior to use in any other process discourages some opportunities for outright discharge elimination which conflicts with the stated goals of the Clean Water Act. For example, some facilities might opt to use a wet scrubber's discharge as reagent make-up for a new dry scrubber in an integrated design which would essentially evaporate the wet FGD wastewater stream. EPA's proposed requirement to meet limits prior to use in any other process would make that prudent treatment path less attractive." [Underline mine]

TVA: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OW-2009-0819-4607

- We would appreciate the opportunity to discuss this issue with you and your team prior to the transmittal of a final rule package to OMB.

4. Does your Division Director know you're asking for this meeting?
   Yes.

5. Date and time requested.
   June 24, 2015 from 10:00 AM to 11:00 AM (1 hr.)

6. Invitees
   Who should be invited as Mandatory? Betsy Southerland, Colin Enssle, Lynn Zipf, Rob Wood, Jan Matuszko, and Ronald Jordan

7. Additional Information

8. For more information about this request, please contact

POC: Colin Ensslle Ex. 6 - Personal Privacy

To: Elizabeth Sabol[Elizabeth.Sabol@erg.com]
Cc: Alicea, Jezebele[Alicea.Jezebele@epa.gov]; Deborah Bartram[Deborah.Bartram@erg.com]; Flanders, Phillip[Flanders.Phillip@epa.gov]; Jordan, Ronald[Jordan.Ronald@epa.gov]; Ryan Novak[Ryan.Novak@erg.com]; Thomas Finseth[Thomas.Finseth@erg.com]; ron.grabowski@us.cbpg.com[ron.grabowski@us.cbpg.com]
From: gary.mooney@us.cbpg.com
Sent: Mon 4/7/2014 8:28:45 PM
Subject: Re: CBPG Fly and Bottom Ash Responses to Questions
SE04697_CBPG_Followup_03252014 With CBPG Responses.docx
EPA FLY ASH SYSTEM COST SUMMARY - APRIL 7 2014.pdf

Good Afternoon, Elizabeth et al:

We enclose our comments and responses to your March 25 set of questions regarding our previous cost studies for Fly Ash & Bottom Ash Systems.

We also enclose a revised Fly Ash Cost chart showing the additional cost for a redundant Filter-Receiver in each of our scenarios.

We also point out that the activity level for quoting closed loop water recirculation systems for retrofit bottom ash systems is picking up now that the December 19, 2014 deadline is fast approaching.

We cannot enclose any confidential active proposals at this time but pricing is very competitive.

Thank you again for allowing Clyde Bergemann Power Group, CBPG, to assist both the Eastern Research Group and the EPA.

Regards,

Gary D. Mooney
Product Manager, Ash Technology
Clyde Bergemann Power Group Americas Inc.
Materials Handling Product Division

>>CLEAN ENERGY SOLUTIONS<<

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Email: gary.mooney@us.cbpg.com
Internet: www.cbpg.com

Clyde Bergemann Power Group Americas Inc. | Materials Handling Product Division | 33 Sproul Road | Malvern | Pennsylvania | 19355

From: Elizabeth Sabol <Elizabeth.Sabol@erg.com>
To: "gary.mooney@us.cbpg.com" <gary.mooney@us.cbpg.com>,
Cc: "Alicea, Jezebele" <Alicea.Jezebele@epa.gov>, "Jordan, Ronald" <Jordan.Ronald@epa.gov>, "Flanders.Phillip@epa.gov" <Flanders.Phillip@epa.gov>, Deborah Bartram <Deborah.Bartram@erg.com>, "Ryan Novak" <Ryan.Novak@erg.com>, Thomas Finseth <Thomas.Finseth@erg.com>
Date: 03/25/2014 12:08 PM

Subject: Fly and Bottom Ash Questions for CBPG

Gary,

First, thank you for all of the fly ash and bottom ash design and cost information you've provided to date. As you know, we used these data to estimate compliance costs associated with fly ash and bottom ash handling conversions for the Proposed Steam Electric ELGs.

As we discussed during our conversation back in January, EPA is now evaluating the proposed cost methodology to identify any potential updates, if needed. Therefore, in addition to the information we discussed during our call, EPA would like to request responses to the questions in the attached file to ensure that we are correctly interpreting your data.

If any of the information associated with the attached questions is confidential business information (CBI), please do not send the answers back electronically. Instead, please send the response to the following address:

Eastern Research Group, Inc.
Attention: Ryan Novak
14555 Avion Parkway
Suite 200
Chantilly, VA 20151

EPA is requesting this additional information by April 8, 2014. We look forward to your answers and comments regarding costs associated with fly and bottom ash handling. We would appreciate your feedback and thank you in advance for your time and effort.

If you have any questions about the attached file, or would like to discuss the request, please give me a call at 610-344-0829.

Thanks,
Elizabeth

Elizabeth A. Sabol
Environmental Engineer
Eastern Research Group, Inc.
14555 Avion Parkway, Suite 200
Chantilly, VA 20151
elizabeth.sabol@erg.com
Phone: 610-344-0829
[attachment "SE04697_CBPG_Followup_03252014.docx" deleted by Gary Mooney/CBDD/Clyde Bergemann]

4/7/2014
GDM

FLY ASH CONVERSION COSTS

Fly Ash Generation Rate	**TPH**	**5-6**	**10-11**	**15-17**	**25**
Fly Ash Conveying Rate	**TPH**	**10-12**	**20-22**	**30-35**	**50**
Primary Line Size	**INCHES**	**6**	**8**	**10**	**12**

From Wet System (Dry to Water Jet Exhausters) to Dry Vacuum with Dry Vacuum Pumps					**500 Feet**
Hopper & Branch Line Equipment	$ 83,125	$ 103,425	$ 177,800	$ 219,450
May Often be Reused				
New Header, Filter-Receiver & Dry Pumps	$ 359,746	$ 419,099	$ 539,988	$ 732,312
Redundant Filter-Receiver	$ 165,816	$ 176,316	$ 186,816	$ 197,316
Total NO SILOS	**$ 608,687**	**$ 698,840**	**$ 904,604**	**$ 1,149,078**

From Wet System (Dry to Water Jet Exhausters) to Pressure System with Blowers				**2500 Feet**
Hopper & Branch Line Equipment	$ 312,550	$ 441,560	$ 808,850	$ 1,103,620
Must Replace Existing				
New Header, Blowers, Bin Vent	**$ 633,559**	**$ 792,255**	**$ 934,895**	**$ 1,253,586**
Total NO SILOS	$ 946,109	$ 1,233,815	$ 1,743,745	$ 2,357,206

From Wet System (Dry to Water Jet Exhausters) to Vacuum-Pressure				**2500 Feet**
Hopper & Branch Line Equipment	$ 83,125	$ 103,425	$ 177,800	$ 219,450
May Often be Reused				
New Header, Filter-Receiver & Dry Pumps	$ 300,325	$ 341,871	$ 450,960	$ 626,900
Redundant Filter-Receiver	$ 165,816	$ 176,316	$ 186,816	$ 197,316
Sub Total - Vacuum	**$ 549,266**	**$ 621,612**	**$ 815,576**	**$ 1,043,666**
New Pressure System	$ 413,558	$ 502,415	$ 598,378	$ 827,190
Total Including New Hopper Valves	$ 962,824	$ 1,124,027	$ 1,413,954	$ 1,870,856
Total If able to reuse Branch Lines	$ 713,883	$ 844,286	$ 1,049,338	$ 1,454,090
NO SILOS				

Silos						
Storage for 3 days (72 Hours)	TONS	432	792	1,224	1,800
Volume @ 45 pcf	CU FT	19,200	35,200	54,400	80,000
Diameter	FEET	25	30	35	40
Cost for Basic Steel Silo		$ 265,000	$ 425,000	$ 640,000	$ 925,000
Level Indicators, Manway, Jib Crane		$ 65,000	$ 65,000	$ 65,000	$ 65,000
Aeration System		$ 65,000	$ 120,000	$ 200,000	$ 300,000
Pugmill Unloader: 150 TPH		$ 245,000	$ 245,000	$ 245,000	$ 245,000
Dry Dust Unloader		$ 65,000	$ 65,000	$ 65,000	$ 65,000
Total		$ 705,000	$ 920,000	$ 1,215,000	$ 1,600,000

Post Proposal Follow Up Questions for Clyde Bergemann Power Group
March 25, 2014
With Responses April 7, 2014

EPA proposed revisions to the effluent limitations guidelines and standards (ELGs) for the Steam Electric Power Generating category (40 CFR Part 423) on June 7, 2013 (78 FR 34431). Based on our conversation with you on January 9, 2014, EPA would like to ask some additional questions about fly ash and bottom ash handling.

Background:

EPA proposed a methodology to estimate the cost of conversions from wet to dry fly and bottom ash handling systems using Clyde Bergemann Power Group (CBPG) design and cost data. For the proposed rule, EPA estimated plant-specific fly ash compliance costs based on a conversion from a wet sluicing system to a dry vacuum handling system. Additionally, EPA also estimated plant-specific bottom ash compliance costs based on a conversion from a wet sluicing system to a Submerged Scraper Conveyor (SSC) system or an ASHCON™ system.

In order to further develop the proposed methodology, EPA requests responses to the questions below to ensure correct interpretation of CBPG's supplied data.

Fly Ash:

EPA's fly ash cost methodology estimates compliance costs associated with converting from a wet sluicing system to a dry vacuum handling system. The methodology accounts for costs associated with the conveyance, intermediate storage (i.e., silo and pugmill), and transport/disposal portions of the fly ash handling system. Currently, EPA estimates equipment capital costs for both conveyance and intermediate storage based on cost curves generated from the CPBG fly ash cost data provided to EPA in November 2010. For the conversion costs, EPA assumed that the hopper and branch line equipment from the existing handling systems would continue to be used in the retrofitted dry system. Additionally, EPA calculates an installation cost (2 x equipment capital costs) and an engineering overhead cost (percent of total equipment and installation capital costs). EPA's installation costs account for the installation of all equipment; piping; instrumentation/calibration; electrical equipment; mechanical equipment; structural supports, insulation, and paint. EPA's engineering overhead costs account for process design and general engineering, cost engineering, consulting fees, supervision, inspection for engineering contract firm costs and owner's overhead engineering costs. These factors were calculated using survey data from the 2009 Steam Electric Survey.

We would like to ask you the following questions to confirm what the original fly ash conversion cost estimates (conveyance and intermediate storage) include and what other cost factors may need to be accounted for in the costing methodology. Additionally, it would be extremely helpful if you can provide definitions for the cost elements included in your original cost estimates.

1. Do the fly ash equipment costs provided in November 2010 already include any of the following cost elements:
    a. Freight and tax? Freight Yes but No Taxes
    b. Engineering overhead costs? Yes, all internal CBPG Engineering
    c. Bonding and insurance? No
    d. Contingency? Standard internal Contingency %
    e. Buildings? None, other than Silos
    f. Land? No
2. If any of the cost elements listed Question 1 are already included, please provide the estimated percentage of costs that those elements represent in the November 2010 fly ash equipment costs.
    a. Freight Assume 5%
    b. Engineering Assume 10%
    c. Contingency Assume 5%
3. In documentation provided to EPA summarizing bottom ash conversion costs, you indicated that "pricing given reflects fully erected and commissioned systems including equipment, controls, foundations, and field labor." The fly ash equipment cost estimates do not include any similar type of statement. Can you verify if the fly ash equipment costs include controls, foundations (for conveyance only), and field labor, or if the costs just represent the purchased equipment?

    We do not typically engage in Turnkey Fly Ash Systems so our estimates are from the more familiar Design and Supply bids with "just purchased equipment". The controls were assumed to be only system logic for integration into existing plant DCS systems – not new PLC systems. No foundations or field labor was included.
4. Would you consider the "balance of plant" costs (e.g., site preparation, concrete, electrical, upgraded control systems, demolition/relocation, or structural modifications) to include the same cost elements as installation costs?

    We considered all of these costs to be by Others. A typical installation contractor would not be doing the site preparation and foundations. Those tasks are generally done before the installation contractor for our system arrives to demolish/relocate and install our equipment and connect the electrical, air and water lines.
5. Are building and land acquisition capital costs typically incurred by plants for a fly ash handling conversion? If yes, how would you estimate these costs?

    No, typically any new fly ash system is installed on the existing plant site so acquisition costs are rare. If buildings are needed for weather protection of blowers, for example, we do not have an estimate for them and they most likely vary in cost from colder latitudes to warmer latitudes.
6. What equipment would be necessary to "winterize a fly ash system?" Are these capital costs typically incurred by plants for a fly ash handling conversion? Do the fly ash equipment costs provided in November 2010 include these costs (e.g., costs associated with insulation)?

    Our cost estimates did not include any insulation, heat tracing or any other form of winterization. Fly ash is warm at the pick-up points so the basic conveying systems and silo bag filters do not immediately require protection. In colder

climates, the pneumatic systems can be run all the time or for warm-up periods before introducing the ash into the conveying lines. But ultimately the ash will cool down in silos and tanks so these will require some additional capital costs.

7. From the bill of materials associated with the cost estimates provided in November 2010, can you provide a definition of "Lot Miscellaneous I&C?"

   This is for conveying line mounted instrumentation needed to monitor and provide feedback to the main control DCS or PLC panel, neither of which are included. The main I&C in the lines are the vacuum/pressure/temperature transmitters.

As previously discussed during our call in January, EPA is also evaluating the need for certain plants to have backup wet sluicing systems. In order to accurately estimate compliance costs, we would like to ask you the following questions.

1. Can you confirm that the cost estimates provided in November 2010 include the typical level of redundancy required to operate a plant without an unscheduled shutdown as a result of dry handling maintenance?

   The typical level of redundancy in a wet-to-dry fly ash conversion is to use two installed 100% vacuum blowers with motors that replace the former single vacuum producer (steam or water jet exhauster). We did not use redundant bag filters or conveying line equipment. Some customers do ask for more redundancy but that was not included in our estimates.

2. From the bill of materials provided in the November 2010 costs, CBPG listed only one filter-separator associated with the cost estimate. Is this typical, or should we consider including a second filter-separator in the cost estimates for redundancy? How would this additional equipment affect the cost estimates?

   It is typical/common to only use one filter-receiver with a low air-to-cloth ratio for vacuum systems ending over a new silo. We have seen duplicate/redundant filter-receiver trains in vacuum-pressure transfer systems and many A/E's are specifying that approach. This is an option we can always offer a customer. **We have added a cost line under each category for a second filter-receiver.**

3. If you were tasked with adding 100 percent redundancy to a "bare bones" dry vacuum fly ash system at a plant, originally installed with no redundancy, what type of equipment would need to be added to the existing system? Do you have any cost estimates associated with this type of project?

   This is an abstract case that could mean having two disposal paths at each ESP or PJFF hopper outlet with twin conveying lines per branch and twin headers to two silos each with twin filter-receivers. That usually would lead to cross-over valves and fittings so the cost for this ultimate redundant system would be more than just twice a normal system. We have never been asked to do this.

Bottom Ash:

EPA's bottom ash cost methodology estimates compliance costs associated with converting from a wet sluicing system to a Submerged Scraper Conveyor (SSC) or an ASHCON ™ system. The methodology accounts for the system costs and transport/disposal of the dewatered bottom ash. Currently, EPA estimates equipment capital costs based on cost curves generated from the CBPG bottom ash cost data provided to EPA in June 2011. Because the costs were said to represent "fully erected and commissioned systems including equipment, controls, foundations, and field labor," EPA assumed that costs associated with installation were included in the CBPG cost data. EPA also calculates an engineering overhead cost (percent of total equipment capital costs). EPA's engineering overhead costs account for process design and general engineering, cost engineering, consulting fees, supervision, inspection for engineering contract firm costs and owner's overhead engineering costs. These factors were calculated using survey data from the 2009 Steam Electric Survey.

We would like to ask you the following questions to confirm what the original bottom ash conversion cost estimates include and what other cost factors may need to be accounted for in the costing methodology. Additionally, it would be extremely helpful if you can provide definitions for the cost elements included in your original cost estimates.

1. Do the bottom ash equipment costs provided in June 2011 already include any of the following cost elements:
    a. Freight and tax? Freight Yes but No Taxes
    b. Demolition of the existing boiler? Not the boiler but the existing ash hopper
    c. Engineering overhead costs? Yes, all internal CBPG Engineering
    d. Bonding and insurance? No
    e. Contingency? Standard internal Contingency %
    f. Buildings? None
    g. Land? No
2. If any of the cost elements listed Question 1 are already included, please provide the estimated percentage of costs that those elements represent in the June 2011 bottom ash costs.
    a. Freight Assume 5%
    b. Engineering Assume 10%
    c. Contingency Assume 5%
    d. Demolition Assume 30% of the Installation Costs
3. In documentation provided to EPA summarizing bottom ash conversion costs, you indicated that "pricing given reflects fully erected and commissioned systems including equipment, controls, foundations, and field labor." Can you verify if the June 2011 equipment costs include any of the following cost elements:
    a. Electrical; Yes
    b. Mechanical; Yes
    c. Upgraded control systems; Yes
    d. Boiler modifications; Yes, but only in the lower seal plate area
    e. Upgraded piping (more erosive-resistant material); or Yes, ASHCON™ only
    f. Structural modifications. Not to existing structures, only new
4. How much land is required for an ASHCON™ system? Are land costs typically incurred by plants for ASHCON™ retrofits?

An ASHCON™ Remote Submerged Scraper Conveyor system needs less land than a dewatering bin system and needs to be located close enough to the plant to allow the existing jet pumps to reach the new location (closer than the ash pond). All plants we have studied have existing space on site and no land acquisition is involved.

5. Are/would building costs typically incurred by plants for ASHCON™ retrofits in northern states?

   Yes, many plants are adding protective weather enclosures over several remote conveyors to also protect workers doing routine preventative maintenance.

Additionally, EPA's current bottom ash methodology calculates "bottom ash management" costs for plants that recycle more than 90 percent of their bottom ash transport water. EPA speculates that these plants will be able to eliminate future discharges and operate a fully closed loop system without any major system modifications. EPA included a one-time cost associated with an outside engineer to evaluate how the plant can achieve zero discharge of their bottom ash transport water. Can you provide information on plants that have pursued a closed loop system, the modifications necessary to eliminate future discharges, and cost estimates ($/foot of pipe) associated with this type of project?

The most direct way to avoid zero discharge of water is to install an all dry system like our DRYCON™ system. Our Florida installation is a prime example of removing a former closed loop water recirculation system with many pumps and reducing horsepower, maintenance and water costs all at once.
The early remote submerged conveyor installations were not full water recirculation systems with the requisite number of low, intermediate and high pressure pumps. There have been a few studies of this nature for confidential clients. There is a major EPC project being bid right now involving multiple plants and Units. We cannot generalize on these closed loop systems but we can share copies of our proposal confidentially to ERG to illustrate the complexity involved. We do not believe these costs, while multi-million of dollars per Unit, are significant enough to justify not proceeding with a wet-to-dry closure of an ash pond.

To: gary.mooney@us.cbpg.com[gary.mooney@us.cbpg.com]
Cc: Alicea, Jezebele[Alicea.Jezebele@epa.gov]; Jordan, Ronald[Jordan.Ronald@epa.gov]; Flanders, Phillip[Flanders.Phillip@epa.gov]; Deborah Bartram[Deborah.Bartram@erg.com]; Ryan Novak[Ryan.Novak@erg.com]; Thomas Finseth[Thomas.Finseth@erg.com]
From: Elizabeth Sabol
Sent: Tue 3/25/2014 3:59:42 PM
Subject: Fly and Bottom Ash Questions for CBPG
SE04697_CBPG_Followup_03252014.docx

Gary,

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As we discussed during our conversation back in January, EPA is now evaluating the proposed cost methodology to identify any potential updates, if needed. Therefore, in addition to the information we discussed during our call, EPA would like to request responses to the questions in the attached file to ensure that we are correctly interpreting your data.

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Eastern Research Group, Inc.

Attention: Ryan Novak

14555 Avion Parkway

Suite 200

Chantilly, VA 20151

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If you have any questions about the attached file, or would like to discuss the request, please give me a call at 610-344-0829.

Thanks,

Elizabeth

Elizabeth A. Sabol

Environmental Engineer

Eastern Research Group, Inc.

14555 Avion Parkway, Suite 200

Chantilly, VA 20151

elizabeth.sabol@erg.com

Phone: 610-344-0829

Post Proposal Follow Up Questions for Clyde Bergemann Power Group
March 25, 2014

EPA proposed revisions to the effluent limitations guidelines and standards (ELGs) for the Steam Electric Power Generating category (40 CFR Part 423) on June 7, 2013 (78 FR 34431). Based on our conversation with you on January 9, 2014, EPA would like to ask some additional questions about fly ash and bottom ash handling.

Background:

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In order to further develop the proposed methodology, EPA requests responses to the questions below to ensure correct interpretation of CBPG's supplied data.

Fly Ash:

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We would like to ask you the following questions to confirm what the original fly ash conversion cost estimates (conveyance and intermediate storage) include and what other cost factors may need to be accounted for in the costing methodology. Additionally, it would be extremely helpful if you can provide definitions for the cost elements included in your original cost estimates.

1. Do the fly ash equipment costs provided in November 2010 already include any of the

following cost elements:

a. Freight and tax?
b. Engineering overhead costs?
c. Bonding and insurance?
d. Contingency?
e. Buildings?
f. Land?

2. If any of the cost elements listed Question 1 are already included, please provide the estimated percentage of costs that those elements represent in the November 2010 fly ash equipment costs.
3. In documentation provided to EPA summarizing bottom ash conversion costs, you indicated that "pricing given reflects fully erected and commissioned systems including equipment, controls, foundations, and field labor." The fly ash equipment cost estimates do not include any similar type of statement. Can you verify if the fly ash equipment costs include controls, foundations (for conveyance only), and field labor, or if the costs just represent the purchased equipment?
4. Would you consider the "balance of plant" costs (e.g., site preparation, concrete, electrical, upgraded control systems, demolition/relocation, or structural modifications) to include the same cost elements as installation costs?
5. Are building and land acquisition capital costs typically incurred by plants for a fly ash handling conversion? If yes, how would you estimate these costs?
6. What equipment would be necessary to "winterize a fly ash system?" Are these capital costs typically incurred by plants for a fly ash handling conversion? Do the fly ash equipment costs provided in November 2010 include these costs (e.g., costs associated with insulation)?
7. From the bill of materials associated with the cost estimates provided in November 2010, can you provide a definition of "Lot Miscellaneous I&C?"

As previously discussed during our call in January, EPA is also evaluating the need for certain plants to have backup wet sluicing systems. In order to accurately estimate compliance costs, we would like to ask you the following questions.

1. Can you confirm that the cost estimates provided in November 2010 include the typical level of redundancy required to operate a plant without an unscheduled shutdown as a result of dry handling maintenance?
2. From the bill of materials provided in the November 2010 costs, CBPG listed only one filter-separator associated with the cost estimate. Is this typical, or should we consider including a second filter-separator in the cost estimates for redundancy? How would this additional equipment affect the cost estimates?
3. If you were tasked with adding 100 percent redundancy to a "bare bones" dry vacuum fly ash system at a plant, originally installed with no redundancy, what type of equipment would need to be added to the existing system? Do you have any cost estimates associated with this type of project?

Bottom Ash:

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We would like to ask you the following questions to confirm what the original bottom ash conversion cost estimates include and what other cost factors may need to be accounted for in the costing methodology. Additionally, it would be extremely helpful if you can provide definitions for the cost elements included in your original cost estimates.

1. Do the bottom ash equipment costs provided in June 2011 already include any of the following cost elements:
    a. Freight and tax?
    b. Demolition of the existing boiler?
    c. Engineering overhead costs?
    d. Bonding and insurance?
    e. Contingency?
    f. Buildings?
    g. Land?
2. If any of the cost elements listed Question 1 are already included, please provide the estimated percentage of costs that those elements represent in the June 2011 bottom ash costs.
3. In documentation provided to EPA summarizing bottom ash conversion costs, you indicated that "pricing given reflects fully erected and commissioned systems including equipment, controls, foundations, and field labor." Can you verify if the June 2011 equipment costs include any of the following cost elements:
    a. Electrical;
    b. Mechanical;
    c. Upgraded control systems;
    d. Boiler modifications;
    e. Upgraded piping (more erosive-resistant material); or
    f. Structural modifications.
4. How much land is required for an ASHCON™ system? Are land costs typically incurred by plants for ASHCON™ retrofits?
5. Are/would building costs typically incurred by plants for ASHCON™ retrofits in northern states?

Additionally, EPA's current bottom ash methodology calculates "bottom ash

management" costs for plants that recycle more than 90 percent of their bottom ash transport water. EPA speculates that these plants will be able to eliminate future discharges and operate a fully closed loop system without any major system modifications. EPA included a one-time cost associated with an outside engineer to evaluate how the plant can achieve zero discharge of their bottom ash transport water. Can you provide information on plants that have pursued a closed loop system, the modifications necessary to eliminate future discharges, and cost estimates ($/foot of pipe) associated with this type of project?

To: Alicea, Jezebele[Alicea.Jezebele@epa.gov]; Flanders, Phillip[Flanders.Phillip@epa.gov]; Jordan, Ronald[Jordan.Ronald@epa.gov]; Deborah Bartram[Deborah.Bartram@erg.com]; Elizabeth Sabol[Elizabeth.Sabol@erg.com]; Ryan Novak[Ryan.Novak@erg.com]; Thomas Finseth[Thomas.Finseth@erg.com]; KevinMcDonough@unitedconveyor.com[KevinMcDonough@unitedconveyor.com]
From: Elizabeth Sabol
Sent: Tue 1/14/2014 2:19:44 PM
Subject: Re: Steam Electric ELGs - Ash Handling

Good morning,

Below, please find the agenda for our call at 10:00. Thanks! Liz

Agenda:

- Introduction

- Fly Ash Handling Technologies - Dense Slurry System

- Fly Ash Operations - Backup Wet Sluicing Systems

- Bottom Ash Technologies - SFC/CDR Systems

- Summary and Follow up

Elizabeth A. Sabol
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Eastern Research Group, Inc.
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Chantilly, VA 20151
elizabeth.sabol@erg.com
Phone:610-344-0829

>>> Elizabeth Sabol 1/13/2014 9:42 AM >>>

Hi All:

The purpose of this call will be to discuss some of the ash handling topics raised by public commenters on the proposed Steam Electric ELGs. I will be sending out an agenda prior to our call.

Call in
Code: Ex. 6 - Personal Privacy

Looking forward to our discussion.

Thanks,
Liz

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To: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Enssle, Colin (GE Power & Water)
Sent: Fri 7/10/2015 12:57:34 AM
Subject: Re: steam electric effluent guidelines

Thanks, I was actually invited to the meeting today - I was going to call you tomorrow to let you know. I can't go; I'll be on vacation next week.

But in essence, I believe they (including James Shapiro, Kirsten Nathanson, Patrick Hedren, and Michael Fitzpatrick) want to express the same position we communicated to you about the anti-circumvention provision of the ELGs to OMB.

Patrick is a Counsel who works with/for Michael Fitzpatrick on regulatory affairs for GE Corporate. He's a good guy.

I'm going to try and call in, but not sure if I will be able to. I'll circle back after Monday, ok?

Thanks,

Colin

On Jul 9, 2015, at 6:46 PM, Jordan, Ronald <Jordan.Ronald@epa.gov<mailto:Jordan.Ronald@epa.gov>> wrote:

Hi Colin,

In case you're not aware, GE has arranged a meeting with OMB. Which part of GE is Patrick Hedren affiliated with?

To: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Enssle, Colin (GE Power & Water)
Sent: Wed 6/10/2015 2:53:49 PM
Subject: FW: Comments on Docket ID No. EPA-HQ-OW-2009-0819
Comments on EPA-HQ-OW-2009-0819.pdf

Hi Ron,

See below and attached for the original submittal by Crowell re: Homer City and the ELGs.

Thanks,

Colin

From: Nathanson, Kirsten L. [mailto:KNathanson@crowell.com]
Sent: Wednesday, June 10, 2015 10:45 AM
To: Enssle, Colin (GE Power & Water)
Subject: FW: Comments on Docket ID No. EPA-HQ-OW-2009-0819

Hi Colin – I'm taking a guess on your email address. See below transmittal of the comment letter to EPA; not sure why they wouldn't have posted the letter?

From: Chung, David
Sent: Wednesday, June 10, 2015 10:39 AM
To: Nathanson, Kirsten L.
Subject: FW: Comments on Docket ID No. EPA-HQ-OW-2009-0819

From: Chung, David
Sent: Friday, September 20, 2013 4:48 PM
To: ow-docket@epa.gov
Subject: Comments on Docket ID No. EPA-HQ-OW-2009-0819

On behalf of Homer City Generation, L.P., please find attached comments on EPA's Proposed Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category.

David Y. Chung

dchung@crowell.com
Ex. 6 - Personal Privacy Fax: 1.202.628.5116

Crowell & Moring LLP | www.crowell.com

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crowell moring

David Chung
(202) 624-2587
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September 20, 2013

VIA EMAIL

Administrator Gina McCarthy
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Acting Assistant Administrator Nancy Stoner
U.S. Environmental Protection Agency
Office of Water
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Comments on EPA's Proposed *Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category*, 78 Fed. Reg. 34,432 (June 7, 2013) (Docket No. EPA-HQ-OW-2009-0819)

Dear Administrator McCarthy and Acting Assistant Administrator Stoner:

Homer City Generation, L.P. ("Homer City") appreciates the opportunity to comment on the Environmental Protection Agency's ("EPA's") proposed revisions to the effluent limitations guidelines and standards ("ELGs") for the steam electric power generating point source category. Homer City owns the Homer City Generating Station, a three unit, 1,884 megawatt coal-fired power plant located in Indiana County, Pennsylvania, and as such will be directly and significantly affected by the proposed revisions. This facility employs approximately 260 people, supports thousands of additional local jobs, and generates electricity for approximately two million homes in Pennsylvania. Moreover, Homer City is in the process of installing state-of-the-art scrubber technology that will make the Station one of the cleanest coal-fired power plants in the nation.

Homer City acknowledges the need for EPA to update the existing ELGs in light of technological advances and supports EPA's goal of protecting the environment and public health. Nonetheless, certain of the proposed revisions are flawed, as discussed below. Compliance with those proposed revisions will require burdensome changes that will not result

in commensurate benefits to water quality. Homer City thus urges EPA to consider the comments below.

I. EPA's BAT Limitations For FGD Wastewater Are The Product Of Inadequate Analyses And Are Not Cost Effective

Homer City opposes EPA's proposed BAT limits for flue-gas desulfurization ("FGD") wastewater, which are based on chemical precipitation and biological treatment technology options. EPA analyzed these technologies using a data set that is far too limited, thereby resulting in overly stringent limits that likely cannot be achieved by many power stations, including the Homer City Generating Station. EPA's industry-wide cost effectiveness analysis is also flawed, as its calculations of cost per toxic-weighted pound-equivalent (TWPE) for FGD wastewater are orders of magnitude below those calculated by the Utility Water Act Group ("UWAG").

A. Errors In EPA's Sampling And Data

EPA's data set for calculating BAT for FGD wastewater consists of a limited number of samples collected from only seven power plants. For each of those plants, EPA relied only on data from a four-day sampling event, as well as one-day samples over a four-month period. *See* EPA-HQ-OW-2009-0819-1953 (Memorandum from C. Schroeder, U.S. EPA, to R. Jordan, U.S. EPA, "Effluent Limitations for FGD Wastewater, Gasification Wastewater, and Combustion Residual Leachate for the Proposed Effluent Limitations Guidelines and Standards for the Steam Electric Rulemaking (Oct. 2012)). EPA then supplemented this sparse sampling data with self-monitoring data from a few stations. The data set relied on by EPA is not representative of how FGD wastewater varies across the industry given the variability among FGD treatment systems, as well as the quality and quantity of water throughout a given power station. Wastewater composition varies across the industry depending on the type of coal and sorbent used, how FGD systems are operated, the materials of construction in the system, levels of recycle within the absorber, and air pollution control systems operated upstream of the FGD system.[1]

EPA also fails to explain why it excluded data that it obtained from certain stations, including the Homer City Generating Station. EPA should not issue BAT limits for FGD technology until it compiles a more robust data set that better captures not only variability of FGD wastewater across the industry, including, but not limited to, seasonal variability, differences in treatment systems, water quality and quantity variability, and changes in operations and processes.

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[1] In particular, the materials of construction and FGD system operations can affect the concentration of pollutants in the FGD wastewater because they affect the amount of recycle within the system, which in turn, affects the rate at which FGD wastewater is generated.

In its comments to the proposed rule, UWAG provides detailed criticisms and comments on EPA's data set and methodology. Homer City generally supports those comments and hereby incorporates them by reference.

B. EPA's Cost Effectiveness Analysis Is Flawed

Homer City agrees with UWAG's comments regarding how EPA's cost-effectiveness analysis significantly underestimates the costs per TWPE for FGD wastewater. According to EPA, the cost per TWPE for the proposed FGD wastewater options ranges from $60 to $69, in 1981 dollars. *See* EPA-HQ-OW-2009-0819-2255 (cost-effectiveness analysis). UWAG, by contrast, estimates the cost per TWPE as ranging from nearly $1,000 to several thousands of dollars, in 1981 dollars. UWAG's comments account for this staggering disparity by explaining various errors in EPA's cost-effectiveness analysis. In particular, EPA conducted a combined cost effectiveness analysis for chemical precipitation and biological treatment systems when it should have analyzed the costs and benefits of those systems separately. EPA also erroneously counted TWPEs for several pollutants (boron, magnesium, manganese, and cyanide) even though the Agency's own data reflect that such pollutants are not actually removed. These and other errors have led EPA to grossly underestimate cost per TWPE.

UWAG's analysis shows that even a low-end estimate of the cost per TWPE is much higher than EPA has ever approved in any other BAT rulemaking.[2] This suggests that none of EPA's proposed technology options for FGD wastewater is cost-effective. Before EPA proceeds with its rulemaking, it should address the concerns set forth by UWAG and recalculate the industry-wide cost estimates in light of those concerns.

C. EPA's Proposed Limits For FGD Wastewater Are Not Economically Feasible

Although EPA has discretion to impose ELGs even when costs outweigh benefits, EPA must nevertheless ensure that the "BAT determination remains economically feasible for the industry as a whole." *Texas Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 936 (5th Cir. 1998); *see also* 67 Fed. Reg. 64,216, 64,233 (Oct. 17, 2002) (concluding that a proposed option was not BAT for the iron and steel manufacturing point source category because that option "is not economically achievable" and could result in "two closures and 5 00 job losses"). EPA must also weigh

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[2] As the preamble to the proposed rule explains, EPA's "review of approximately 25 of the most recently promulgated or revised BAT limitations reflects BAT cost-effectiveness figures ranging from less than $1/lb-eq (Inorganic Chemicals) to $404/lb-eq (Electrical and Electronic Components), in 1981 dollars. 78 Fed. Reg. at 34,504. Notably, in 2003, EPA determined that a technology with a cost of $1000/lb-eq was not BAT in its Metal Products and Machinery rulemaking, observing that this figure was "substantially higher" than what EPA typically imposed for BAT technology in prior rulemakings, *i.e.*, less than $200/lb-eq. *See* 68 Fed. Reg. 26,686, 25,701-02 (May 13, 2003). Similarly, in discussing its cost-effectiveness analysis for this proposed rule, EPA observed that controlling leachate using chemical precipitation would exceed $1,000 per TWPE removed and that EPA was not including that among its preferred options. 78 Fed. Reg. at 34,474 n.38.

whether it is feasible to retrofit existing plants in light of the age of those plants. *See Am. Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1048 (3d Cir. 1975) ("Where we believe the Administrator erred, however, was in his failure to consider age as it had a bearing on the cost or feasibility of retrofitting plants."). The record for EPA's proposed rule does not demonstrate that it would be feasible for the industry, particularly for older plants such as the Homer City Generating Station, to treat FGD wastewater by chemical precipitation combined with biological treatment down to EPA's proposed limits. Thus, EPA should propose new limits using a more robust data set. Because such new limits are likely to deviate significantly from those in the proposed rule, EPA should allow for additional review and comment on those limits.

EPA's analysis of the feasibility of biological treatment rests on data from two Duke Energy plants (Allen and Belews Creek) that burn similar coals and have similar influent characteristics. *See* EPA-HQ-OW-2009-0819-1953 at Section 7. In particular, the nitrate-nitrite influent for these plants is quite low, which makes it easier for those plants to meet both the proposed nitrate-nitrite and selenium limits. *See id.* at Section 7.3.2 (Allen: mean of 22.5 mg/L and maximum of 39.0 mg/L; Belews Creek: mean of 17.1 mg/L and maximum of 21.0 mg/L). At other plants, where nitrate-nitrite influents are much higher, additional treatment will be required prior to selenium removal; otherwise, the bacteria in the biological treatment system will primarily lower nitrate-nitrite levels, but not selenium. Specifically, at Homer City, the nitrate-nitrite influents are considerably higher (from 2004 to 2013: mean of 162 mg/L; maximum of 440 mg/L) than those at Allen and Belews Creek, which will make it much more costly to treat down to 10 ppb selenium.[3] Moreover, to help illustrate the unreasonableness of EPA's proposed limit for selenium, Homer City's existing NPDES permit contains a water quality-based effluent limitation for selenium of *800 ppb*. Accordingly, the selenium limits proposed by EPA are not even necessary to protect water quality. This observation is likely true at other power stations across the country that have influents that are more difficult to treat than those at Allen and Belews Creek.

Moreover, EPA assumes that because the biological treatment system that forms the basis for its proposed limits reduces both selenate and selenite to its elemental form, the form of selenium present in the FGD wastewater does not impact the removals achieved by the preferred regulatory options. However, the use of organic acid additives creates organic/unknown speciated selenium compounds and nitrogen species in the FGD wastewater. These species are not as amendable to biological treatment.

The efficacy of biological treatment systems can also vary because the bacteria used in the system are sensitive to certain changes in FGD wastewater composition. Many FGD systems within the industry, including Homer City's, have been designed to operate with chloride

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[3]According to EPA's data, the nitrate/nitrite influent to the FGD wastewater treatment system at the Pleasant Prairie appears comparably high (four-day average of 158 mg/L). *See* EPA-HQ-OW-2009-0819-0758, at 4-3. Such high levels may make the proposed selenium and nitrate/nitrite limits unachievable.

concentrations between 10,000 and 20,000 mg/L. This results in much lower purge rates and smaller FGD WWTP overall. EPA's preferred regulatory options for FGD wastewater incorporate the use of flow minimization for plants with high FGD discharge flow rates (*i.e.*, greater than 1,000 gpm) and FGD system metallurgy and operating practices that can accommodate an increase in chlorides. Implementation of flow minimization would increase chloride, sodium, and every other constituent concentration, which could inhibit the effectiveness of biological treatment. Moreover, bacteria may not be able to withstand spikes in chloride levels in FGD wastewater. At Homer City, chloride levels vary by season and can increase dramatically in winter months (*e.g.*, up to approximately 15,600 ppm). Similarly, at other stations, chloride levels can increase to well over 20,000 ppm. These increases in chloride levels can be caused by a number of different factors, such as road salts being pulled into the influent at the Station. The bacteria in any biological treatment system are likely to be adversely impacted by such fluctuations in chloride levels, thereby calling into question whether a limit of 10 ppb selenium is achievable under such conditions. To minimize impacts on the bacteria in these systems, plants may have to dilute FGD purge water. But this could overload other existing wastewater treatment system units, thereby increasing costs. Prior to finalizing any FGD wastewater limits based on biological treatment systems, EPA should provide long-term effluent data that supports use of such systems at higher chloride concentrations.

Finally, EPA is imposing a low limit for selenium in FGD wastewater that incidentally only one technological system (GE ABMet) appears to be capable of meeting. Yet EPA has, in the past, suggested that it is improper to impose any particular technology on a discharger when promulgating ELGs. *See, e.g.*, *Iowa League of Cities v. EPA*, 711 F.3d 84, 856 (8th Cir. 2013) ("The EPA has interpreted this [ELG] regime as precluding it from imposing any particular technology on a discharger."); NPDES Permit Writers' Manual at 5-14 to 5-15 ("[E]ach facility has the discretion to select any technology design and process changes necessary to meet the performance-based discharge limitations and standards specified by the effluent guidelines."). Regardless of whether the ABMet technology is demonstrated at a small number of plants, there is an inadequate basis in the record for EPA to conclude that such technology would work at plants, such as the Homer City Generating Station, with different influents and operating parameters. And while there may be ongoing research efforts with respect to other systems, no other technology has been demonstrated to achieve selenium levels as low as 10 ppb.

In light of the foregoing concerns, EPA must reconsider its proposed FGD wastewater limits and adopt a standard that is economically feasible. In reconsidering the technological availability and economic achievability of its proposed FGD limits, EPA must take into account the magnitude and complexity of process changes and new equipment installations that would be required at facilities to meet the requirements of the rule. *See, e.g.*, *Am. Iron & Steel Inst.*, 526 F.2d at 1048.

II. EPA's Should Not Finalize The Proposed "Anti-Circumvention" Provisions

A. The Proposed Provisions Are Unnecessary In Light Of Existing Regulations

Existing regulations (40 C.F.R. § 423.13(h)) setting forth BAT for the steam electric industry already ensure that power station operators do not circumvent effluent limits and standards by moving effluent produced by one process operation to another for discharge under less stringent requirements. EPA is retaining that provision in the proposed rule (proposed § 423.13(n)), but it is also proposing additional language that is duplicative and could result in less wastewater reuse and recycling to the detriment of the environment. Specifically, with respect to each of the proposed zero discharge effluent limitations/standards (fly ash, bottom ash, flue gas mercury control), EPA proposes to include language stating that whenever wastewater in any of those categories "is used in any other plant process or is sent to a treatment system at the plant, the resulting effluent must comply with the discharge prohibition." *See* Proposed 40 C.F.R. §§ 423.13(h)(1), (i)(1), and (k)(1). Such language could effectively discourage water reuse and recycling and thus should be removed from the rule.

Moreover, EPA should not finalize the proposed internal monitoring provisions for BAT that generally require dischargers to demonstrate compliance with effluent limitations for FGD wastewater and gasification wastewater prior to use of such wastewater in any other plant process or commingling such wastewater. *See* Proposed 40 C.F.R. §§ 423.13(g)(3), (j)(3). EPA lacks authority under the Clean Water Act to establish effluent limitations to internal plant processes, as opposed to at the end of the pipe (*i.e.*, the addition of a pollutant to navigable waters). *See, e.g.*, *Iowa League of Cities*, 711 F.3d at 877 ("The EPA would like to apply effluent limitations to the discharge of flows from one internal treatment unit to another. We cannot reasonably conclude that it has the statutory authority to do so."); *Am. Iron & Steel Inst. v. EPA*, 115 F.3d 979, 996 (D.C. Cir. 1997) ("The statute is clear: The EPA may regulate the pollutant levels in a waste stream that is discharged directly into the navigable waters of the United States through a 'point source'; it is not authorized to regulate the pollutant levels in a facility's internal waste stream."). In light of these recent precedents, EPA should remove the proposed internal monitoring provisions from the rule.

In any event, even assuming EPA has statutory authority to apply internal effluent limits and standards within a facility, and it does not, the proposed rule is needlessly duplicative of the existing rule governing "internal waste streams" found in EPA's NPDES regulations. *See* 40 C.F.R. § 122.45(h). That rule provides that:

> (1) When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams. In those instances, the monitoring required by § 122.48 shall also be applied to the internal waste streams.

> (2) Limits on internal waste streams will be impose d only when the fact sheet under § 124.56 sets forth the exceptional circumsta nces which make such limitations necessary, such as when the final disch arge point is inaccessible (for example, under 10 meters of water), the wastes at t he point of discharge are so diluted as to make monitoring impracticable, or the interferences among pollutants at the point of discharge would make det ection or analysis impracticable.

Id.

Rather than impose a uniform internal monitoring requirement for certain waste streams, EPA should rely on its existing regulation, which allows for limits and monitoring for internal waste streams only when there is a showing of "exceptional circumstances." EPA should not, in the context of an industry-wide rulemaking, sidestep that predicate finding by proclaiming that such exceptional circumstances exist here.

B. EPA Should Not Finalize Internal Monitoring Requirements For Residual Combustion Leachate

Homer City agrees with EPA's determination not to propose an internal monitoring requirement in the BAT provision for residual combustion leachate. *See* Proposed § 423.13(l). Homer City urges EPA *not* to finalize Options 4 or 5 for leachate, which would require monitoring for compliance prior to use of leachate in any other plant process or commingling of the leachate with water. *See* TDD at 14-16. Such a requirement would add significant and unnecessary costs to Homer City's operations.

Homer City uses a wastewater recycle ("WWR") system that converts iron in leachate wastewater from the station's coal refuse disposal facility so that the iron can be used as a coagulant. The converted WWR water is commingled with raw makeup water in the cooling tower clarifier mixing chamber. After agglomeration, flocculation, and sedimentation, clarified water continues on to provide the necessary makeup to the station's water systems. Without the use of iron in this manner, the station's cooling systems would clog with sediment and impair the cooling processes needed for power generation.

Homer City would be significantly burdened by a new requirement to meet effluent limitations for leachate prior to using the leachate in its WWR system. Currently, Homer City recycles all leachate as described above. If, as a result of EPA's rule, Homer City must first demonstrate compliance with TSS and oil and grease limits prior to any reuse or recycling, it would incur substantial costs to install and operate leachate treatment technology. Moreover, because such treatment (specifically, for TSS) would remove iron from the leachate that is needed for coagulation, Homer City would incur additional costs from having to introduce a substitute material to the clarifier to replace the lost iron source.

C. If EPA Finalizes Internal Monitoring Requirements, It Should Establish Exceptions

If EPA finalizes internal monitoring requirements, it should clarify that wastewaters (*e.g.*, metal cleaning water, leachate, FGD wastewater, contaminated storm water, coal pile runoff, etc.) that are commingled prior to higher levels of treatment such as chemical precipitation are not subject to those requirements. In addition, a *de minimis* quantity of wastewater should also be excluded to account for discharges associated with short term equipment maintenance and leaks, especially from bottom ash transport water systems and zero liquid discharge systems.

Finally, if EPA finalizes the proposed internal monitoring requirement for FGD wastewater (*See* Proposed § 423.13(g)(3)), it should retain the language therein allowing for the commingling of FGD wastewater with combustion residual leachate or other FGD wastewater without having to demonstrate compliance with the BAT for FGD wastewater prior to such commingling. While it may not be realistic or feasible to co-treat FGD wastewater and leachate at all power stations, the rule should nevertheless give power generators the option to do so without having to conduct internal monitoring.

III. EPA Should Not Finalize Stand-Alone Limits For Combustion Residual Leachate

EPA is proposing to remove combustion residual leachate from the definition of "low-volume waste." *See* 78 Fed. Reg. at 34,457. The proposed rule would then impose the same limits on leachate (for TSS and oil and grease) that already apply to low volume waste under the existing BPT provision. EPA does not articulate a sound rationale for removing leachate from the definition of low volume waste and thus, it should not finalize standalone limits for leachate. *See, e.g.*, Proposed §§ 423.12(b)(11), 423.13(l).

If EPA insists on promulgating limits for leachate, Homer City strongly supports EPA's decision to apply the current BPT limits for low volume waste, *i.e.*, 100/30.0 mg/l for TSS and 20.0/15.0 mg/l for oil and grease. In deriving these limits, EPA assumed that the technology basis for controlling leachate is impoundment. *See* TDD at 8-4. EPA properly declined to propose a preferred regulatory option that assumes control of leachate through chemical precipation (Options 4 and 5). *See id.* Such technology would not be cost-effective, as EPA appears to recognize. *See* 78 Fed. Reg. at 34,474 n.38 (stating that the cost-effectiveness of controlling leachate using chemical precipitation would exceed $1,000 per TWPE removed, which is far in excess of the highest cost-effectiveness ratio for BAT that EPA has approved in recent years).

EPA's proposal to impose standalone limits for leachate raises the question of what will be subject to the proposed regulation. First, EPA can only regulate discharges from point sources. To the extent seepage is not collected and channelized prior to being discharged to surface waters, it should not be subject to effluent limitations. Second, EPA should not include stormwater runoff from the tops of covered landfills within the definition of leachate. *See* TDD

at 4-35. Third, if leachate is collected and sent to centralized waste treatment facilities, it should be subject only to effluent limitations in 40 C.F.R. part 437, *not* new limits in this rulemaking.

Finally, to the extent a facility expands upon an existing landfill, such expansion should not trigger the definition of "new source" in 40 C. F.R. § 122.29. Existing solid wastes (*e.g.*, fly ash, bottom ash, gypsum, etc.) from the steam electric industry are routinely added to landfills. When new wastes are generated, disposal will likely occur in landfills.[4] Consequently, active captive and non-captive landfills (and inactive landfills that become active) are in a continuous state of expansion and can be expanded horizontally and vertically for many years. Such expansions might include construction on onsite lands not contiguous with an existing landfill or at off-site locations. When a facility merely expands an existing landfill, it is not: (i) constructing a facility at a site where no other source is located; (ii) totally replacing process of production equipment that causes the discharge of pollutants at an existing source; or (iii) a source whose processes are substantially independent of an existing source at the same site. *See id.* § 122.29 (b)(1) (setting forth criteria for new source determinations).[5]

IV. EPA's Rulemaking Record Does Not Justify Promulgating New Requirements For Nonchemical Metal Cleaning Wastewater

Homer City supports EPA's proposal to promulgate BAT limits for nonchemical metal cleaning wastes that are identical to limits that currently apply to such wastes. Specifically, facilities that are currently only subject to BPT limits for low volume waste (*i.e.*, 100/30.0 mg/L for TSS and 20.0/15.0 mg/L for oil and grease) will continue to be subject only to those limits. By contrast, those facilities that currently must also meet copper and iron limits (1.0 mg/L) in addition to TSS and oil and grease limits must continue to meet copper and iron limits.

In 1997, the Pennsylvania Department of Environmental Protection ("PA DEP") released a guidance document clarifying that "'non-chemical' metal cleaning wastes are to be considered as low-volume wastes and therefore not subject to BPT-BAT limitations for copper and iron." *See* PA DEP, "Technical Guidance for Development of NPDES Permit Requirements; Steam Electric Industry," Doc. No. 362-2183-004, at 4-5 (Dec. 1997). That document further stated that "EPA Region III has agreed to this approach for all steam electric cases (for consistency purposes until EPA finally clarifies this issue in terms of revised BAT regulations)." *Id.* Consistent with this guidance, Homer City's existing permit does not include copper and iron limits for low-volume wastes, including non-chemical metal cleaning wastes. Thus, the Homer

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[4] For example, waste biosolids from a new biological treatment system or crystallized salts associated with a new spray drier would be considered new wastes requiring disposal.

[5] As set forth in more detail above, Homer City urges EPA not to finalize any of its proposed "anti-circumvention" provisions. If EPA chooses to do so, it should not impose any internal monitoring requirement for the BAT limits for leachate (*i.e.*, it should not finalize Options 4 or 5), and it should retain the language allowing for co-treatment of FGD wastewater with leachate without requiring operators to demonstrate compliance with the BAT limits for FGD wastewater prior to such co-treatment.

City Generating Station would be among the many power stations that is eligible for what EPA refers to as an "exemption" from copper and iron limits.

EPA should finalize the suggested approach of making the "exemption" from copper and iron limits available to any facility that meets the criteria for the exemption, "regardless of whether the facility was identified to EPA during the comment period." 78 Fed. Reg. at 34,471. This would ensure that any determinations concerning the applicability of the "exemption" are made by individual permitting agencies that have knowledge of existing permits and are better positioned to determine whether non-chemical metal cleaning wastes are indeed regarded as low volume waste in those permits. EPA should *not* condition the applicability of the exemption on whether power stations demonstrate that they are eligible for the exemption during the public comment period for this rulemaking.

Furthermore, EPA should clarify that the term non-chemical metal cleaning wastes is intended to capture only episodic discharges of wash water, not the sort of continuous drainage that occurs throughout the day at various locations within a given power station. In addition, "FGD equipment cleaning" should be removed from the scope of non-chemical metal cleaning wastes. *See* TDD at 4-39. At the Homer City Generating Station, equipment cleaning water from the wet scrubber is collected in a sump and then returned to the wet FGD absorber. Eventually, that water would discharge at the wet FGD wastewater treatment plant. Such discharges should only be subject to limits applicable to FGD wastewater, and not additional limits applicable to wash water.

Finally, EPA should not finalize copper and iron BAT limits for nonchemical metal cleaning wastes for all power stations, as it is currently considering. *See id.* As explained fully in UWAG's comments, the record for this rulemaking does not contain data to support imposition of copper and iron limits on non-chemical metal cleaning wastewater. In particular, EPA's suggestion that power stations "typically" already comply with copper and iron limits and its assumption that the costs of complying with such limits would not be significant are unsupported and erroneous. Contrary to EPA's assumptions, Homer City and other facilities would, in fact, incur considerable costs if EPA finalizes copper and iron limits for wash water. Specifically, Homer City will have to incur substantial costs optimizing how wastewater is collected at the station, installing additional permanent piping, and reconfiguring plant drainage systems to treat nonchemical metal cleaning wastes for copper and iron.

If, however, EPA chooses to finalize copper and iron limits for all power stations, it must not make those limits immediately effective. Rather, it should allow those facilities that are not currently subject to copper and iron limits sufficient lead time (*e.g.*, as soon as possible within the next permit cycle beginning July 1, 2017) to comply with the new limits. As explained above, plants will have to implement many costly changes to comply with those new limits; thus, immediate imposition of those limits is not reasonable. EPA should also clarify that commingling of nonchemical metal cleaning waste, coal pile runoff, and low-volume waste is permissible, and it should impose limits for copper and iron at the point of discharge to surface

waters, *not* prior to commingling. Plants should not have to put in place additional treatment systems and conduct internal monitoring for nonchemical metal cleaning wastewater when such waste can effectively be treated along with other low volume wastes using the same treatment system prior to any discharge to surface waters.

V. EPA Cannot And Should Not Finalize BMPs For Surface Impoundments In This Rulemaking

EPA states that it is "considering establishing BMPs for plant operators to conduct periodic inspections of active and inactive surface impoundments and to take corrective actions where warranted." 78 Fed. Reg. at 34,466. EPA provides limited information on such BMPs, and thus Homer City cannot provide meaningful comments at this time. EPA should not, and legally cannot, move forward with surface impoundment BMPs until more details are provided and the stakeholders are afforded an opportunity to review and comment. *See Sprint Corp. v. FCC*, 315 F.3d 369 (D.C. Cir. 2003) (final rule must be "logical outgrowth" of an agency's proposal, but "there can be no 'logical outgrowth' of a proposal that the agency has not properly noticed").

EPA is actively evaluating requirements for surface impoundments in the context of its ongoing rulemaking under RCRA entitled "Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities." *See* 75 Fed. Reg. 35,128 (June 21, 2010) (hereinafter, the "CCR Rule"). Given that parallel rulemaking, EPA should not impose duplicative or potentially inconsistent requirements under this rule. EPA also should avoid duplicating existing state requirements that are applicable to surface impoundments. For example, Homer City is already subject to requirements established under Pennsylvania law. *See, e.g.*, 25 Pa. Code Chs. 105 (Dam Safety and Waterways Management), 287 (Residual Waste Management), 289 (Residual Waste Disposal Impoundments), 290 (Beneficial Use of Coal Ash), and 299 (Storage and Transportation of Residual Waste). These state requirements confirm that Pennsylvania "has already developed a comprehensive regulatory program for the disposal of CCR that exceeds either the Subtitle C or Subtitle D approaches that are proposed in" the CCR Rule. Pa. Dept. of Envtl. Protection, Comments on CCR Rule, Docket ID No. EPA-HQ-RCRA-2009-0640-6872, at 1 (Nov. 19, 2010). EPA should not duplicate or attempt to supersede those requirements in this rulemaking.

VI. EPA Should Extend The Voluntary Incentive Program To Plants That Have Already Implemented The Changes EPA Seeks To Incentivize

EPA has proposed a voluntary incentive program for plants that close and cap coal combustion residual surface impoundments and eliminate discharges of all process wastewater (except cooling water) to surface waters. *See* 78 Fed. Reg. at 34,467. Specifically, under Tier 1 of this program, plants would be given an additional two years to comply with the new limits if they dewater, close, and cap all surface impoundments (except for those that contain only

combustion residual leachate) at the facility, including those impoundments located on non-adjoining property that receive coal combustion residuals from the facility. *See id.* Plants, such as Homer City, that have invested in dry handling or closed-loop tank-based systems should also be eligible for the proposed voluntary incentive program. These plants are already meeting EPA's goals of preventing, reducing, and eliminating pollution. Thus, EPA should finalize its voluntary incentive program proposal, and it should expand it to include plants that have already implemented the changes EPA seeks to incentive under that program.

VII. EPA Should Clarify Timing Requirements

EPA anticipates that, under this proposed approach, all steam electric facilities will have the proposed BAT limitations applied to their permits no later than July 1, 2022, approximately 8 years from the date of promulgation of any final rule. EPA must consider that a firm date of compliance will also be impacted by delays in issuance of NPDES permits. Often NPDES permits are administratively extended for many years after expiration. Also, after NPDES permits are issued, many permits are appealed for various reasons by plants and third party groups. Therefore, establishing a firm final date of compliance may cause plants to be noncompliant.

VIII. Conclusion

Homer City appreciates the opportunity to comment on EPA's proposed revisions to the ELGs for the steam electric power generating point source category.

At your request, we would be happy to provide you with additional information.

Respectfully yours,

Chet M. Thompson
David Y. Chung

On behalf of Homer City Generation, L.P.

To: Flanders, Phillip[Flanders.Phillip@epa.gov]; Covington, James[Covington.James@epa.gov]
Cc: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Zheng, Xiqi
Sent: Thur 2/26/2015 4:36:35 PM
Subject: RE: Proposed ELG for steam electric power plants - discussion with Evoqua Water Technologies

James and Dr. Flanders:

It would be great if James could join the call. I am stilling finalizing the questions, but a few would be market / economics related (such as understanding the estimated industry and social cost). Questions would be sent for your review.

James – Dr. Flanders proposed next Monday/Tuesday after 2pm ET or Wednesday morning. Would this work for you too?

Xiqi (David) Zheng

Strategic Marketing Manager

Evoqua Water Technologies

Email: xiqi.zheng@evoqua.com

Mobile: Ex. 6 - Personal Privacy

From: Zheng, Xiqi
Sent: Wednesday, February 25, 2015 3:48 PM
To: 'Flanders, Phillip'
Cc: Jordan, Ronald
Subject: RE: Proposed ELG for steam electric power plants - discussion with Evoqua Water Technologies

Dr. Flanders,

Thank you very much for getting back to me. Let me talk to my team and send you preliminary questions/topics as well as a meeting invite.

Best,

Xiqi (David) Zheng

Strategic Marketing Manager

Evoqua Water Technologies

Email: xiqi.zheng@evoqua.com

Mobile: Ex. 6 - Personal Privacy

From: Flanders, Phillip [mailto:Flanders.Phillip@epa.gov]
Sent: Wednesday, February 25, 2015 3:44 PM
To: Zheng, Xiqi
Cc: Jordan, Ronald
Subject: RE: Proposed ELG for steam electric power plants - discussion with Evoqua Water Technologies

Hello David,

I work with Ron Jordan as an Environmental Engineer on the Steam Electric Effluent Guideline (ELG) and can speak with you and help set up a call.

I am curious what sort of questions you might have, because I am unsure that we can provide much more information than what is already available in the documents published for the

proposed ELG and the public record. The ELG is still slated to go final as of September 30 of this year. So, we do not yet know what the content of the final rule will be and can only comment on the proposed rule.

That said, I think we could set up a call next Monday, Tuesday afternoon after 2:00, or Wednesday morning. Perhaps one of these times could work?

Thank you,

Phillip Flanders, Ph.D.

Environmental Engineer

Engineering and Analysis Division

Office of Science and Technology

Office of Water

1200 Pennsylvania Ave NW

Mail Code 4303T

Washington, DC 20460

(202) 566-8323

From: Zheng, Xiqi [mailto:xiqi.zheng@evoqua.com]
Sent: Friday, February 20, 2015 6:15 PM
To: Jordan, Ronald
Cc: Gillen, Douglas F; McCloskey, Charles J; Hunsaker, Mark D; Covington, James
Subject: Proposed ELG for steam electric power plants - discussion with Evoqua Water Technologies
Importance: High

Good afternoon Ron,

My name is David Zheng, and I am the Strategic Marketing Manager of Evoqua Water Technologies. Your colleague, James Covington, recommended you as my contact person.

Evoqua is an international water treatment company servicing both industrial and municipal customers. Electric power plants is one of the major market segments for our business. As we are conducting strategic review of the market trend and identifying the waste water challenges of coal firing power plants, we would like to better understand the proposed ELG, implications, reactions from the market, and the implementations.

At this point, we have some assumptions we would like to validate and some knowledge gaps to close. It would be much appreciated if we could **schedule a 45-60 mins discussion over the phone** with you. I will send you a discussion guide / topics before our meeting. If this is ok, please kindly let us know your availabilities in the coming days. And of course, feel free to invite any of your colleagues to the discussion.

Evoqua discussion team (tentative):

Chuck McCloskey, Vice President & General Manager of General Industries

Douglas Gillen, Director of Strategic Marketing

Mark Hunsaker, Director of Business Development

David Zheng, Strategic Marketing Manager

We appreciate your time and look forward to hearing back from you.

Best regards,

Xiqi (David) Zheng

Strategic Marketing Manager

Evoqua Water Technologies

Email: xiqi.zheng@evoqua.com

Mobile: Ex. 6 - Personal Privacy

To: Jordan, Ronald[Jordan.Ronald@epa.gov]; Mark J. Kropilak Esq.[mark@libertyhydro.com]; John Taylor[john.taylor@libertyhydro.com]
From: pfarina4@gmail.com
Sent: Wed 9/24/2014 4:30:02 PM
Subject: Re: FW: EPA request for meeting to discuss ZVI for FGD wastewater

I wanted to thank you and your team for meeting with us yesterday. Our goal is to help you understand our technology and how we can help the industry meet the proposed regulations. We will be sending you the information on our technology and cost estimates as suggested. Please keep this confidential.
We will share with you any results we can on our pilot results but some of this information is owned by EPRI and therefore must be release by them.
If you have any questions please do not hesitate to call us directly. We look forward to working with you.

On Sep 19, 2014 9:18 AM, "Phil Farina" <phil.farina@libertyhydro.com> wrote:

> Ron
> We are an industrial strength team, what ever works for you will work for us. See you at 1 PM Sept 23
>
> I had a great conversation with your colleague Sharon DeMeo from Boston. She is working on the Merrimack permit and I think we can help her there with the Selenium issue. She would like to be kept in the loop on our conversation.
>
> Phil Farina
> Sales Executive
>
> Liberty Hydro
> Phil.farina@libertyhydro.com
> 419-346-8848
>
> On Thu, Sep 18, 2014 at 2:29 PM, Jordan, Ronald <Jordan.Ronald@epa.gov> wrote:
>
> > Phil,
> >
> > It turns out that 10am on the 23rd is a bit of a problem for us. Can we move the meeting to a 1pm start?
> >
> > **From:** Jordan, Ronald
> > **Sent:** Thursday, September 18, 2014 11:37 AM
> > **To:** 'Phil Farina'
> > **Cc:** Flanders, Phillip; Mark J. Kropilak Esq.; John Taylor

Subject: RE: EPA request for meeting to discuss ZVI for FGD wastewater

Phil,

10am on September 23 is fine for us. I suggest you arrive at EPA's East Building entrance, which is on Constitution Avenue (1201 Constitution Ave., NW). You'll need to bring photo ID to gain entrance to the building. The guard will call us when you arrive – please ask him/her to call Phillip Flanders (566-8323).

From: pfarina4@gmail.com [mailto:pfarina4@gmail.com] **On Behalf Of** Phil Farina
Sent: Thursday, September 18, 2014 10:54 AM
To: Jordan, Ronald
Cc: Flanders, Phillip; Mark J. Kropilak Esq.; John Taylor
Subject: Re: EPA request for meeting to discuss ZVI for FGD wastewater

The Liberty Hydro team is available on September 23 to discuss the ZVI technology for Selenium management at steam electric power plants. We would suggest a meeting at 10:00 am if that is convenient.

Please provide specific address.

We look forward to our discussions.

Phil Farina

Sales Executive

Liberty Hydro

Phil.farina@libertyhydro.com

419-346-8848

On Wed, Sep 17, 2014 at 3:02 PM, Jordan, Ronald <Jordan.Ronald@epa.gov> wrote:

Good afternoon Mr. Farina,

I'm the team leader for the group at EPA working on revisions to the effluent guidelines for wastewater discharges from steam electric power plants. Although effluent guidelines typically do not require the use of any particular treatment technology, the discharge limits that we establish will be based on the performance of treatment technology (or a suite of technologies). As such, EPA has investigated a variety of full-scale and pilot-scale technologies for treating wastewater from flue gas desulfurization systems -- zero valent iron is one of the technologies we have tried to keep abreast of over the last few years. We're particularly interested in an update on the technology and its pollutant removal processes (including a discussion of the full treatment train for a system that incorporates ZVI treatment), as well as any information you can share about its performance and cost. I would appreciate the opportunity to discuss these topics with you. Would you be available for a meeting at here in Washington DC on September 23? Alternatively, October 15 or 16 would also work well for us.

I look forward to hearing from you.

Regards,

Ron

Ron Jordan

USEPA Office of Water

Engineering & Analysis Division

(202) 566-1003

To: Jordan, Ronald[Jordan.Ronald@epa.gov]
Cc: Flanders, Phillip[Flanders.Phillip@epa.gov]; Mark J. Kropilak Esq.[mark@libertyhydro.com]; John Taylor[john.taylor@libertyhydro.com]
From: pfarina4@gmail.com
Sent: Thur 9/18/2014 2:53:57 PM
Subject: Re: EPA request for meeting to discuss ZVI for FGD wastewater

The Liberty Hydro team is available on September 23 to discuss the ZVI technology for Selenium management at steam electric power plants. We would suggest a meeting at 10:00 am if that is convenient.
Please provide specific address.
We look forward to our discussions.

Phil Farina
Sales Executive

Liberty Hydro
Phil.farina@libertyhydro.com
419-346-8848

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>
> I look forward to hearing from you.
>
> Regards,

Ron

Ron Jordan

USEPA Office of Water

Engineering & Analysis Division

(202) 566-1003

To: Ramach, Sean[Ramach.Sean@epa.gov]; dkplath@nisource.com[dkplath@nisource.com]; Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Imbornone, Thomas P
Sent: Fri 7/18/2014 5:46:22 PM
Subject: RE: New technology being developed as an alternative to bio-reactors for ELGs

Sean,

That is fantastic news. I am available on those days, but there are a few key people on my end that must be involved. I would imagine they will be able to make one of these days work, but I will confirm shortly and we can set something up.

Thank you!

Kind Regards,

Tom Imbornone

Regional Sales Engineer

Evoqua Water Technologies LLC

765-620-0042

thomas.imbornone@evoqua.com

From: Ramach, Sean [mailto:Ramach.Sean@epa.gov]
Sent: Friday, July 18, 2014 1:34 PM
To: dkplath@nisource.com; Jordan, Ronald
Cc: Imbornone, Thomas P
Subject: RE: New technology being developed as an alternative to bio-reactors for ELGs

Hi gentlemen,

I have cc'd Ron Jordan, the EPA lead on the SEELG revisions to this email. He is interested in following up with you on the details of the technology and the pilot study that you have planned.

It looks like he is free Monday, July 28th for most of the day as am I as well as Thursday July 31 in the afternoon. If those days work for you, let us know and we can set a time once Ron confirms he is available.

Cheers,

Sean Ramach

Environmental Scientist | P:312-886-5284 F:312-692-2502| ramach.sean@epa.gov

U.S. EPA, Region 5, Water Division, NPDES Programs Branch | 77 W. Jackson Blvd., WN-16J | Chicago, IL 60604


Please consider the environment before printing this e-mail.

From: dkplath@nisource.com [mailto:dkplath@nisource.com]
Sent: Friday, July 18, 2014 11:48 AM
To: Ramach, Sean
Cc: Imbornone, Thomas P
Subject: New technology being developed as an alternative to bio-reactors for ELGs

Hi Sean,

I hope all has been well on your end. When we met on the 316 (a) question at the NIPSCO Bailly Generating Station last year, you mentioned that you are on EPA's Steam Electric working group. NIPSCO has been working with a company named Evoqua on doing a pilot study regarding effluent guidelines. Evoqua is the new company that was formed out of Siemens water technology division. They are developing some new treatment systems that are an alternative to bioreactors that are showing very promising results. It looks like they are getting selenium numbers for example that are as good if not better than bioreactors, plus they do not have the temperature issue that you find in cold climates with this technology. When we met with them, I asked if they are talking to EPA on this technology, but it sounded like it has been kind of limited up until this point. I was hoping to put you in touch with Tom Imbornone from Evoqua. I thought that you would be interested in hearing about what they have been working on. Below is Tom's email address. I copied him on this email to hopefully get some dialog going. Thanks

again Sean for all of your work.

Sincerely,

Dan Plath
Principal
NiSource Environmental, Safety, and Sustainability
219-647-5268

****

Tom Imbornone
Regional Sales Engineer

Evoqua Water Technologies LLC
6125 Guion Rd, Indianapolis, IN 46254
Ex. 6 - Personal Privacy
thomas.imbornone@evoqua.com

www.evoqua.com

To: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Mark.OWENS@infilcodegremont.com
Sent: Fri 4/19/2013 3:27:42 PM
Subject: Re: Effluent Guidelines for Steam Electric Power Plants: New documents are now available

Ron,

I am not sure if you remember me, but I worked at ERG a long while back on the MP&M and Industrial Laundry Projects. Now I work for Infilco Degremont in Richmond and we have run across each other a few times relating to Steam Electric Power.

I am currently working with a power customer for an industrial wastewater treatment system. The deal was almost done a month or so ago, but then they stopped negotiating with us suddenly and decided that they they wanted to wait and see what was in the proposed regs for Steam Electric Power. This was frustrating, but it did make some sense. Still, I would like the project to move forward as soon as possible so I made a note to myself to read the proposal the very day it came out.

So today is the day and I was wondering how to get a copy. When I called Deb Bartram, she promptly reminded me that it can take several weeks to get into the FR. Any chance you could send out an advanced copy or put one on your website? If it is signed, it can't change, right?

Thanks and have a great weekend,

Mark Owens, PE
Manager, Process Engineering
Infilco Degremont, Inc.
(804) 756-7618 (office)
(804) 756-7643 (fax)

From: Jordan.Ronald@epamail.epa.gov
To: undisclosed-recipients:;
Date: 10/27/2009 04:29 PM
Subject: Effluent Guidelines for Steam Electric Power Plants: New documents are now available

---

I apologize if this is a repeat message for you -- some email servers blocked the original message due to the size of attached files. We now have the documents posted on EPA's website, so this email announcement includes weblinks to the documents.

I am forwarding for your information several new documents related to wastewater discharges from steam electric power plants, as described below.

1. Final technical report for EPA's Steam Electric Detailed Study

The U.S. Environmental Protection Agency (EPA) recently completed a study of wastewater discharges from the steam electric power generating industry to determine whether to revise the effluent guidelines regulations, which were last updated in 1982. In September, EPA announced plans to revise the effluent guidelines, concluding that the current regulations have not kept pace with changes that have occurred in the industry over the last three decades. Attached for your

information is the final report for EPA's study, Steam Electric Power Generating Point Source Category: Final Detailed Study Report (EPA 821-R-09-008).

In this report, EPA provides an overview of the steam electric power generating industry and its wastewater discharges. EPA evaluated a range of waste streams and processes, with an emphasis on coal ash handling operations and wastewater from flue gas desulfurization (FGD) air pollution control systems. Pollutant characteristics and environmental considerations are summarized, and information about treatment technologies is presented. General information about the steam electric effluent guidelines can be found at http://www.epa.gov/waterscience/guide/steam/. The report can be accessed at http://www.epa.gov/waterscience/guide/steam/finalreport.pdf. For additional information about the final report, contact Ron Jordan by email at Jordan.Ronald@epa.gov, or by telephone at (202) 566-1003.

2. Draft Information Collection Request for Steam Electric Effluent Guidelines Rulemaking

On September 15, 2009, EPA announced plans to develop revised effluent limitations guidelines and standards for steam electric power plants. With that announcement, EPA initiated a process that will require several years and includes several data collection efforts, including distributing a questionnaire to power plants to obtain detailed technical and economic data. EPA will soon publish a Federal Register notice soliciting public comments on a draft information collection request (ICR). The draft ICR includes a questionnaire and, for some plants, a requirement to collect wastewater sampling data. Because of the interest the public has shown in this topic, EPA is sharing the draft questionnaire and ICR supporting statement in advance of the Federal Register notice publication. The documents can be accessed at http://www.epa.gov/waterscience/guide/steam/#point3. For additional information about the ICR, contact Ms. Jezebele Alicea-Virella by email at Alicea.Jezebele@epa.gov, or by telephone at (202) 566-1755.

To: Mark.OWENS@infilcodegremont.com[Mark.OWENS@infilcodegremont.com]
From: Jordan, Ronald
Sent: Wed 4/29/2015 7:56:23 PM
Subject: RE: International Water Conference

Thanks for the opportunity, but no.

From: Mark.OWENS@infilcodegremont.com [mailto:Mark.OWENS@infilcodegremont.com]
Sent: Wednesday, April 29, 2015 2:03 PM
To: Jordan, Ronald
Subject: Fw: International Water Conference

Ron,

Any interest in this? They would need to know soon...

Thanks,

Mark Owens, PE
Manager, Process Engineering
Infilco Degremont, Inc.
(804) 756-7618 (office)

----- Forwarded by Mark OWENS/US/DGT/SLE on 04/29/2015 02:01 PM -----

From: Mark OWENS/US/DGT/SLE
To: jordan.ronald@epa.gov,
Cc: msoller@BowenEngineering.com
Date: 04/13/2015 04:18 PM
Subject: International Water Conference

Ron,

How are things coming with the forthcoming ELG for Steam Electric Power? Still looking good for end of September? I wont ask for specifics, because I know you wont tell me any... Regardless, I hope all is well.

I was discussing this year's International Water Conference with a friend of mine (Mike Soller) who is on the executive committee. I am pretty sure you have attended this conference in the past (along with my old coworkers Deb Bartram and Betsy Bicknell from ERG). The folks planning IWC are working on some sessions relating to the new ELG and it occurred to me that with the conference being in November, these regulations will likely be final by the date of the conference. Perhaps you (or someone else from Office of Water) would like to speak at the conference and share what info you can. After a new rule is

promulgated, the next step is public relations, right? As I recall, you sometimes host 'Town Hall' style meetings to disperse information. I suppose today you would do it with Webinars or some such, but the conference might be better. Besides who doesn't want to go to Orlando in November?

If you are interested, just let me (or Mike - copied) know and we will work to set it up.

Thanks,

Mark Owens, PE
Manager, Process Engineering
Infilco Degremont, Inc.
(804) 756-7618 (office)

To: Phil Farina[phil.farina@libertyhydro.com]
From: Jordan, Ronald
Sent: Thur 9/18/2014 6:29:57 PM
Subject: FW: EPA request for meeting to discuss ZVI for FGD wastewater

Phil,

It turns out that 10am on the 23rd is a bit of a problem for us. Can we move the meeting to a 1pm start?

From: Jordan, Ronald
Sent: Thursday, September 18, 2014 11:37 AM
To: 'Phil Farina'
Cc: Flanders, Phillip; Mark J. Kropilak Esq.; John Taylor
Subject: RE: EPA request for meeting to discuss ZVI for FGD wastewater

Phil,

10am on September 23 is fine for us. I suggest you arrive at EPA's East Building entrance, which is on Constitution Avenue (1201 Constitution Ave., NW). You'll need to bring photo ID to gain entrance to the building. The guard will call us when you arrive – please ask him/her to call Phillip Flanders (566-8323).

From: pfarina4@gmail.com [mailto:pfarina4@gmail.com] **On Behalf Of** Phil Farina
Sent: Thursday, September 18, 2014 10:54 AM
To: Jordan, Ronald
Cc: Flanders, Phillip; Mark J. Kropilak Esq.; John Taylor
Subject: Re: EPA request for meeting to discuss ZVI for FGD wastewater

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Please provide specific address.

We look forward to our discussions.

Phil Farina

Sales Executive

Liberty Hydro

Phil.farina@libertyhydro.com

419-346-8848

On Wed, Sep 17, 2014 at 3:02 PM, Jordan, Ronald <Jordan.Ronald@epa.gov> wrote:

> Good afternoon Mr. Farina,
>
> I'm the team leader for the group at EPA working on revisions to the effluent guidelines for wastewater discharges from steam electric power plants. Although effluent guidelines typically do not require the use of any particular treatment technology, the discharge limits that we establish will be based on the performance of treatment technology (or a suite of technologies). As such, EPA has investigated a variety of full-scale and pilot-scale technologies for treating wastewater from flue gas desulfurization systems -- zero valent iron is one of the technologies we have tried to keep abreast of over the last few years. We're particularly interested in an update on the technology and its pollutant removal processes (including a discussion of the full treatment train for a system that incorporates ZVI treatment), as well as any information you can share about its performance and cost. I would appreciate the opportunity to discuss these topics with you. Would you be available for a meeting at here in Washington DC on September 23? Alternatively, October 15 or 16 would also work well for us.
>
> I look forward to hearing from you.

Regards,

Ron

Ron Jordan

USEPA Office of Water

Engineering & Analysis Division

(202) 566-1003

To: Phil Farina[phil.farina@libertyhydro.com]
Cc: Flanders, Phillip[Flanders.Phillip@epa.gov]; Mark J. Kropilak Esq.[mark@libertyhydro.com]; John Taylor[john.taylor@libertyhydro.com]
Bcc: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Jordan, Ronald
Sent: Thur 9/18/2014 3:37:29 PM
Subject: RE: EPA request for meeting to discuss ZVI for FGD wastewater

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Sent: Thursday, September 18, 2014 10:54 AM
To: Jordan, Ronald
Cc: Flanders, Phillip; Mark J. Kropilak Esq.; John Taylor
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Sales Executive

Liberty Hydro

Phil.farina@libertyhydro.com

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I look forward to hearing from you.

Regards,

Ron

Ron Jordan

USEPA Office of Water

Engineering & Analysis Division

(202) 566-1003

To: phil.farina@libertyhydro.com[phil.farina@libertyhydro.com]
Cc: Flanders, Phillip[Flanders.Phillip@epa.gov]
Bcc: Jordan, Ronald[Jordan.Ronald@epa.gov]
From: Jordan, Ronald
Sent: Wed 9/17/2014 7:02:22 PM
Subject: EPA request for meeting to discuss ZVI for FGD wastewater

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Regards,

Ron

Ron Jordan

USEPA Office of Water

Engineering & Analysis Division

(202) 566-1003

To: John Fournier[jfournier@marronebio.com]
From: Jordan, Ronald
Sent: Thur 6/6/2013 12:26:26 PM
Subject: RE: status of effluent rule for steam electric generation

Good morning, John –

I anticipate the proposed rule will be published in the Federal Register either this week or next.

Regards,

Ron

From: John Fournier [mailto:jfournier@marronebio.com]
Sent: Tuesday, June 04, 2013 7:23 PM
To: Jordan, Ronald
Subject: status of effluent rule for steam electric generation

Greetings, Ron,

I've been checking the website periodically but haven't seen any changes recently. Do you have an idea of when anything new will be posted to regulations.gov for comment?

Thanks,

John Fournier

Regulatory Manager

Marrone Bio Innovations

2121 Second St., Ste B-107
Davis, CA 95618

530-302-8247 (direct line)

Ex. 6 - Personal Privacy (mobile)
jfournier@marronebio.com

www.marronebioinnovations.com

To: Alagappan, Govindan (WT)[govindan.alagappan@siemens.com]
Cc: Alicea, Jezebele[Alicea.Jezebele@epa.gov]
From: Jordan, Ronald
Sent: Mon 4/29/2013 11:49:25 PM
Subject: RE: EPA Discharge Limits for Power Plants (Current)

not necessarily -- that is only one of several potential options. note that there are 8 options presented, including several potential outcomes for FGD wastewater.

From: Alagappan, Govindan (WT) [govindan.alagappan@siemens.com]
Sent: Monday, April 29, 2013 7:42 PM
To: Jordan, Ronald
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Thank you Mr.Ron,

While reviewing the document, I noticed that the numeric limits for selenium, arsenic, mercury and Nitrate in FGD water are defined only for plants with 2000MW or greater. Does that mean EPA will not define the limits for the plants <2000MW?

Govindan Alagappan
Global Director - Business Development
Industry Segment - Power

Siemens Industry Inc.
Water Technologies Business Unit
725 Wooten Road
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Conference Call : Ex. 6 - Personal Privacy
Participant Code:
www.water.siemens.com

From: Jordan, Ronald [mailto:Jordan.Ronald@epa.gov]
Sent: Monday, April 29, 2013 6:12 AM
To: Alagappan, Govindan (WT)
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Regarding your question about timing, see section VIII of the pre-publication Federal Register notice. It is available at: http://water.epa.gov/scitech/wastetech/guide/steam-electric/proposed.cfm

From: Alagappan, Govindan (WT) [mailto:govindan.alagappan@siemens.com]
Sent: Friday, April 26, 2013 6:06 PM
To: Jordan, Ronald
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Dear Mr.Ron,

We noticed that EPA has released updates on the discharge regulations for Steam Electric Power

generating Units. Based on the information we gathered in the report, 4 options are proposed as listed below

Option 3a
Zero discharge limits for fly ash transport water and mercury flue gas control
Numeric limits for mercury arsenic, selenium, and TDS from gasification processes
Numeric limits for copper/iron from nonchemical metal cleaning
Effluent limits for bottom ash transport water and leachate from landfills impoundments
Would apply to coal-fired units great than 50 MW

Option 3b
Numeric limits for mercury, arsenic, selenium, and intrate-nitrite in FGD wastewater
Would apply to plants with at least 2,000 MW
Otherwise, same as 3a

Option 3
Numeric limits for mercury, arsenic, selenium, and intrate-nitrite in FGD wastewater
Would apply to units of least 50 MW
Otherwise, same as 3a

Option 4
Zero discharge for bottom ash transport water
Would apply to units of at least 400 MW
Otherwise, same as 3a

Could you help in answering a few questions on this topic,

When do you anticipate the numeric limits to be established for those components listed in the various options?
While we believe that the rule is anticipated to be finalized in May 2014, how long would the utilities have to comply with these standards?

Thank you in advance and have a great weekend.

Govindan Alagappan
Global Director - Business Development
Industry Segment - Power

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www.water.siemens.com<http://www.water.siemens.com>

From: Jordan, Ronald [mailto:Jordan.Ronald@epa.gov]

Sent: Wednesday, March 27, 2013 7:27 PM
To: Alagappan, Govindan (WT)
Subject: RE: EPA Discharge Limits for Power Plants (Current)

FGD wastewater is currently regulated as “low volume waste” (see the federal regulations, 40 CFR part 423), with effluent limits for TSS and oil & grease. This is one of the wastestreams we’re evaluating for proposed revisions to the effluent guidelines. Proposed revisions will be published in early May.

From: Alagappan, Govindan (WT) [mailto:govindan.alagappan@siemens.com]
Sent: Wednesday, March 27, 2013 6:20 PM
To: Jordan, Ronald
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Dear Mr.Ron,

Many thanks for the information. Do you have something that is specific to FGD waste water treatment mainly for heavy metals, mercury and selenium?

Govindan Alagappan
Global Director - Business Development
Industry Segment - Power

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Participant Code:
www.water.siemens.com<http://www.water.siemens.com>

From: Jordan, Ronald [mailto:Jordan.Ronald@epa.gov]
Sent: Tuesday, March 26, 2013 5:42 PM
To: Alagappan, Govindan (WT)
Subject: RE: EPA Discharge Limits for Power Plants (Current)

The federal standards for wastewater discharges from power plants are available at:
http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div5&view=text&node=40:30.0.1.1.23&idno=40

I’m not aware of state-wide standards for power plant discharges. Generally, the state permitting authority will establish additional requirements (supplemental to the federal standards) as appropriate to address site-specific water quality considerations or other factors.

From: Alagappan, Govindan (WT) [mailto:govindan.alagappan@siemens.com]
Sent: Tuesday, March 26, 2013 4:59 PM
To: Jordan, Ronald
Subject: EPA Discharge Limits for Power Plants (Current)

Dear Mr.Ron Jordan,

I found your name in the EPA website and was hoping that you could help me a little here. Do you know where can I find a copy of the EPA waste water discharge limits for Power plants, I understand that it is under study and likely to get revised in the next couple of months. But I would like to have one that is current.

Also, do you know a place where I can find the discharge limits by state as am being told that it may or may not be different from that of EPA.

Thank you very much in advance for your help.

Govindan Alagappan

Global Director - Business Development

Industry Segment - Power

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Conference Call :

Participant Code: Ex. 6 - Personal Privacy

www.water.siemens.com<http://www.water.siemens.com>

To: Alagappan, Govindan (WT)[govindan.alagappan@siemens.com]
From: Jordan, Ronald
Sent: Mon 4/29/2013 12:11:55 PM
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Regarding your question about timing, see section VIII of the pre-publication Federal Register notice. It is available at: http://water.epa.gov/scitech/wastetech/guide/steam-electric/proposed.cfm

From: Alagappan, Govindan (WT) [mailto:govindan.alagappan@siemens.com]
Sent: Friday, April 26, 2013 6:06 PM
To: Jordan, Ronald
Subject: RE: EPA Discharge Limits for Power Plants (Current)

Dear Mr.Ron,

We noticed that EPA has released updates on the discharge regulations for Steam Electric Power generating Units. Based on the information we gathered in the report, 4 options are proposed as listed below

Option 3a

Zero discharge limits for fly ash transport water and mercury flue gas control

Numeric limits for mercury arsenic, selenium, and TDS from gasification processes

Numeric limits for copper/iron from nonchemical metal cleaning

Effluent limits for bottom ash transport water and leachate from landfills impoundments

Would apply to coal-fired ***units*** great than 50 MW

Option 3b

Numeric limits for mercury, arsenic, selenium, and intrate-nitrite in FGD wastewater

Would apply to ***plants*** with at least 2,000 MW

Otherwise, same as 3a

Option 3

Numeric limits for mercury, arsenic, selenium, and intrate-nitrite in FGD wastewater

Would apply to ***units*** of least 50 MW

Otherwise, same as 3a

Option 4

Zero discharge for bottom ash transport water

Would apply to ***units*** of at least 400 MW

Otherwise, same as 3a

Could you help in answering a few questions on this topic,

When do you anticipate the numeric limits to be established for those components listed in the various options?

While we believe that the rule is anticipated to be finalized in May 2014, how long would the utilities have to comply with these standards?

Thank you in advance and have a great weekend.

Govindan Alagappan

Global Director - Business Development

Industry Segment - Power

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FGD wastewater is currently regulated as "low volume waste" (see the federal regulations, 40 CFR part 423), with effluent limits for TSS and oil & grease. This is one of the wastestreams we're evaluating for proposed revisions to the effluent guidelines. Proposed revisions will be published in early May.

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Many thanks for the information. Do you have something that is specific to FGD waste water treatment mainly for heavy metals, mercury and selenium?

Govindan Alagappan

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www.water.siemens.com

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The federal standards for wastewater discharges from power plants are available at:

http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div5&view=text&node=40:30.0.1.1.23&idno=40

I'm not aware of state-wide standards for power plant discharges. Generally, the state permitting authority will establish additional requirements (supplemental to the federal standards) as appropriate to address site-specific water quality considerations or other factors.

From: Alagappan, Govindan (WT) [mailto:govindan.alagappan@siemens.com]
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To: Jordan, Ronald
Subject: EPA Discharge Limits for Power Plants (Current)

Dear Mr.Ron Jordan,

I found your name in the EPA website and was hoping that you could help me a little here. Do you know where can I find a copy of the EPA waste water discharge limits for Power plants, I understand that it is under study and likely to get revised in the next couple of months. But I would like to have one that is current.

Also, do you know a place where I can find the discharge limits by state as am being told that it may or may not be different from that of EPA.

Thank you very much in advance for your help.

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Conference Call

Participant Code: Ex. 6 - Personal Privacy

www.water.siemens.com

To: John Fournier[jfournier@marronebio.com]
Cc: Keith kpitts[kpitts@marronebio.com]
From: Jordan, Ronald
Sent: Thur 4/25/2013 7:06:17 PM
Subject: RE: chlorinated wastewater effluents, rule making for the Steam Electric Power Generating Effluent Limitations Guidelines

John,

The steam electric effluent guidelines have not yet been published in the Federal Register. We anticipate that will take a couple weeks or so. In the meantime, you can access a pre-publication version of the proposal at: http://water.epa.gov/scitech/wastetech/guide/steam-electric/proposed.cfm.

From: John Fournier [mailto:jfournier@marronebio.com]
Sent: Thursday, April 25, 2013 1:58 PM
To: Jordan, Ronald
Cc: Keith kpitts
Subject: Re: chlorinated wastewater effluents, rule making for the Steam Electric Power Generating Effluent Limitations Guidelines

Hello Ron,

Is the proposed revision still going to be published in April? I'm looking forward to an opportunity to comment.

Many thanks,

John Fournier

Regulatory Manager

Marrone Bio Innovations

2121 Second St., Ste B-107
Davis, CA 95618

530-302-8247 (direct line)
Ex. 6 - Personal Privacy mobile)
jfournier@marronebio.com

www.marronebioinnovations.com

On Feb 21, 2013, at 4:54 PM, Jordan, Ronald wrote:

EPA has not yet issued proposed revisions to the effluent guidelines, currently scheduled for April 2013. A public comment period will begin upon publication of the proposed rule in the Federal Register. Final regulations are scheduled for July 2014.

From: John Fournier [jfournier@marronebio.com]
Sent: Thursday, February 21, 2013 5:01 PM
To: Jordan, Ronald
Cc: Keith kpitts; Jonathan Birdsong
Subject: chlorinated wastewater effluents, rule making for the Steam Electric Power Generating Effluent Limitations Guidelines

Greetings, Ron,

Based on the extension filed in US District Court (Defenders of Wildlife and Sierra Club v. Lisa Jackson/EPA), is there any idea of when the new effluent rule will be finalized? Will there be any additional open comment periods related to this rule?

I am particularly interested in whether chlorinated wastewater effluents have been addressed. Currently, sodium hypochlorite is the control method of choice for controlling macro fouling (asiatic clams, zebra mussels, quagga mussels) in non-contact cooling lines in the steam electric power generation industry and this use pattern has never been assessed by EPA's Office of Pesticide Programs or Office of Water. Use rates for macro fouling can be anywhere from 10-40x the treatment concentrations typically used when

sodium hypochlorite is used as a slimicide (an approved use). Sodium hypochlorite is pending 2013 completion of registration review case in Antimicrobials Division at OPP and this Registration Review does not acknowledge this use pattern or assess this risk.

If any comment periods are to be open before this rule is finalized, I would appreciate an opportunity to raise the issue of sodium hypochlorite for macro fouling in the steam electric power generating industry and the resultant chlorinated wastewater effluents and byproducts (trihalomethanes) resulting from this use pattern.

http://water.epa.gov/scitech/wastetech/guide/steam-electric/upload/statusreport2-8-2013.pdf

Best Regards,

John Fournier

Regulatory Manager

Marrone Bio Innovations

2121 Second St., Ste B-107
Davis, CA 95618

530-302-8247 (direct line)
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jfournier@marronebio.com

www.marronebioinnovations.com

To: bill.rafferty@us.cbpg.com[bill.rafferty@us.cbpg.com]
From: Jordan, Ronald
Sent: Wed 4/24/2013 10:06:49 PM
Subject: RE: Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

None of the supporting documents for the proposed revisions are publicly available yet. They will be available when the proposed rule is published in the Federal Register, approx two weeks or so from now. FYI, at that time the particular document you seek will be available on both regulations.gov and EPA's website.

From: bill.rafferty@us.cbpg.com [bill.rafferty@us.cbpg.com]
Sent: Wednesday, April 24, 2013 4:19 PM
To: Jordan, Ronald
Subject: Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

Mr. Jordan, I am unable to locate EPA 821-R-12-003 referred to in para. 2 on page 17 of the proposed rule issued published April 19th, 2013.

Could you assist me in locating that document.

Thank You
Bill Rafferty
Senior Vice President Sales & Marketing
Clyde Bergemann Power Group Americas

>>CLEAN ENERGY SOLUTIONS<<

Phone: +1 814 434-8840
Email: bill.rafferty@us.cbpg.com<mailto:bill.rafferty@us.cbpg.com>
Internet: www.cbpg.com

Clyde Bergemann Power Group Americas | 2343 West 50th Street | Erie | Pennsylvania | 16506

To: Mark.OWENS@infilcodegremont.com[Mark.OWENS@infilcodegremont.com]
From: Jordan, Ronald
Sent: Mon 4/22/2013 10:34:19 AM
Subject: RE: Effluent Guidelines for Steam Electric Power Plants: New documents are now available

Hi Mark,

Here's a link to the proposed revisions.

http://water.epa.gov/scitech/wastetech/guide/steam-electric/proposed.cfm

From: Mark.OWENS@infilcodegremont.com [mailto:Mark.OWENS@infilcodegremont.com]
Sent: Friday, April 19, 2013 11:28 AM
To: Jordan, Ronald
Subject: Re: Effluent Guidelines for Steam Electric Power Plants: New documents are now available

Ron,

I am not sure if you remember me, but I worked at ERG a long while back on the MP&M and Industrial Laundry Projects. Now I work for Infilco Degremont in Richmond and we have run across each other a few times relating to Steam Electric Power.

I am currently working with a power customer for an industrial wastewater treatment system. The deal was almost done a month or so ago, but then they stopped negotiating with us suddenly and decided that they they wanted to wait and see what was in the proposed regs for Steam Electric Power. This was frustrating, but it did make some sense. Still, I would like the project to move forward as soon as possible so I made a note to myself to read the proposal the very day it came out.

So today is the day and I was wondering how to get a copy. When I called Deb Bartram, she promptly reminded me that it can take several weeks to get into the FR. Any chance you could send out an advanced copy or put one on your website? If it is signed, it can't change, right?

Thanks and have a great weekend,

Mark Owens, PE
Manager, Process Engineering
Infilco Degremont, Inc.
(804) 756-7618 (office)
(804) 756-7643 (fax)

From: Jordan.Ronald@epamail.epa.gov
To: undisclosed-recipients:;
Date: 10/27/2009 04:29 PM

Subject: Effluent Guidelines for Steam Electric Power Plants: New documents are now available

---

I apologize if this is a repeat message for you -- some email servers blocked the original message due to the size of attached files. We now have the documents posted on EPA's website, so this email announcement includes weblinks to the documents.

I am forwarding for your information several new documents related to wastewater discharges from steam electric power plants, as described below.

1. Final technical report for EPA's Steam Electric Detailed Study

The U.S. Environmental Protection Agency (EPA) recently completed a study of wastewater discharges from the steam electric power generating industry to determine whether to revise the effluent guidelines regulations, which were last updated in 1982. In September, EPA announced plans to revise the effluent guidelines, concluding that the current regulations have not kept pace with changes that have occurred in the industry over the last three decades. Attached for your information is the final report for EPA's study, Steam Electric Power Generating Point Source Category: Final Detailed Study Report (EPA 821-R-09-008).

In this report, EPA provides an overview of the steam electric power generating industry and its wastewater discharges. EPA evaluated a range of waste streams and processes, with an emphasis on coal ash handling operations and wastewater from flue gas desulfurization (FGD) air pollution control systems. Pollutant characteristics and environmental considerations are summarized, and information about treatment technologies is presented. General information about the steam electric effluent guidelines can be found at http://www.epa.gov/waterscience/guide/steam/. The report can be accessed at http://www.epa.gov/waterscience/guide/steam/finalreport.pdf. For additional information about the final report, contact Ron Jordan by email at Jordan.Ronald@epa.gov, or by telephone at (202) 566-1003.

2. Draft Information Collection Request for Steam Electric Effluent Guidelines Rulemaking

On September 15, 2009, EPA announced plans to develop revised effluent limitations guidelines and standards for steam electric power plants. With that announcement, EPA initiated a process that will require several years and includes several data collection efforts, including distributing a questionnaire to power plants to obtain detailed technical and economic data. EPA will soon publish a Federal Register notice soliciting public comments on a draft information collection request (ICR). The draft ICR includes a questionnaire and, for some plants, a requirement to collect wastewater sampling data. Because of the interest the public has shown in this topic, EPA is sharing the draft questionnaire and ICR supporting statement in advance of the Federal Register notice publication. The documents can be accessed at

http://www.epa.gov/waterscience/guide/steam/#point3. For additional information about the ICR, contact Ms. Jezebele Alicea Virella by email at Alicea.Jezebele@epa.gov, or by telephone at (202) 566-1755.

To: John Fournier[jfournier@marronebio.com]
From: Jordan, Ronald
Sent: Fri 2/22/2013 12:54:50 AM
Subject: RE: chlorinated wastewater effluents, rule making for the Steam Electric Power Generating Effluent Limitations Guidelines

EPA has not yet issued proposed revisions to the effluent guidelines, currently scheduled for April 2013. A public comment period will begin upon publication of the proposed rule in the Federal Register. Final regulations are scheduled for July 2014.

From: John Fournier [jfournier@marronebio.com]
Sent: Thursday, February 21, 2013 5:01 PM
To: Jordan, Ronald
Cc: Keith kpitts; Jonathan Birdsong
Subject: chlorinated wastewater effluents, rule making for the Steam Electric Power Generating Effluent Limitations Guidelines

Greetings, Ron,

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If any comment periods are to be open before this rule is finalized, I would appreciate an opportunity to raise the issue of sodium hypochlorite for macro fouling in the steam electric power

generating industry and the resultant chlorinated wastewater effluents and byproducts (trihalomethanes) resulting from this use pattern.

http://water.epa.gov/scitech/wastetech/guide/steam-electric/upload/statusreport2-8-2013.pdf

Best Regards,

John Fournier
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jfournier@marronebio.com
www.marronebioinnovations.com

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
Cc: Shapiro, Mike[Shapiro.Mike@epa.gov]; Southerland, Elizabeth[Southerland.Elizabeth@epa.gov]; Neugeboren, Steven[Neugeboren.Steven@epa.gov]; Lape, Jeff[lape.jeff@epa.gov]; Fitzpatrick, Michael (GE Corporate)[michael.fitzpatrick@ge.com]; Chung, David[DChung@crowell.com]
From: Nathanson, Kirsten L.
Sent: Wed 6/3/2015 8:35:12 PM
Subject: Proposed ELGs for steam electric power - Request for meeting

Ken – As my colleague David Chung mentioned to you this morning (at the agricultural stakeholders coffee), I am writing to request a meeting between EPA and GE Energy Financial Services regarding the proposed ELGs for the steam electric power generating industry. In particular, GE has a discrete but operation-critical issue regarding application of the anti-circumvention provision in the proposed rule. Michael Fitzpatrick and/or members of his team from GE would attend along with David and me from Crowell, in addition to at least one representative for GE EFS.

We would appreciate the opportunity to discuss this issue with you and your team prior to the transmittal of a final rule package to OMB. Thank you for your attention to this request, and we look forward to hearing from you and/or your scheduling team.

Sincerely,

Kirsten L. Nathanson

Environment & Natural Resources

knathanson@crowell.com
Direct 1.202.624.2887 | Mobile Ex. 6 - Personal Privacy

Crowell & Moring LLP | www.crowell.com

1001 Pennsylvania Avenue NW
Washington, DC 20004

To: Nathanson, Kirsten L.[KNathanson@crowell.com]
Cc: Shapiro, Mike[Shapiro.Mike@epa.gov]; Southerland, Elizabeth[Southerland.Elizabeth@epa.gov]; Neugeboren, Steven[Neugeboren.Steven@epa.gov]; Lape, Jeff[lape.jeff@epa.gov]; Fitzpatrick, Michael (GE Corporate)[michael.fitzpatrick@ge.com]; Chung, David[DChung@crowell.com]; Penman, Crystal[Penman.Crystal@epa.gov]
From: Kopocis, Ken
Sent: Wed 6/3/2015 10:24:19 PM
Subject: Re: Proposed ELGs for steam electric power - Request for meeting

Yes. We will get it scheduled.
Crystal Penman of my office will reach out with available times.

Ken Kopocis
Office of Water
US EPA
202-564-5700

On Jun 3, 2015, at 4:35 PM, Nathanson, Kirsten L. <KNathanson@crowell.com> wrote:

> Ken – As my colleague David Chung mentioned to you this morning (at the agricultural stakeholders coffee), I am writing to request a meeting between EPA and GE Energy Financial Services regarding the proposed ELGs for the steam electric power generating industry. In particular, GE has a discrete but operation-critical issue regarding application of the anti-circumvention provision in the proposed rule. Michael Fitzpatrick and/or members of his team from GE would attend along with David and me from Crowell, in addition to at least one representative for GE EFS.
>
> We would appreciate the opportunity to discuss this issue with you and your team prior to the transmittal of a final rule package to OMB. Thank you for your attention to this request, and we look forward to hearing from you and/or your scheduling team.
>
> Sincerely,
>
> Kirsten L. Nathanson
>
> Environment & Natural Resources
>
> knathanson@crowell.com
> Direct 1.202.624.2887 | Mobile: Ex. 6 - Personal Privacy

Crowell & Moring LLP | www.crowell.com

1001 Pennsylvania Avenue NW
Washington, DC 20004

From: Southerland, Elizabeth
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM
od-meetingrequest.Steam Electric ELG_Colin Enssle.docx_06_24_15.docx

PLEASE CUT AND PASTE INTO THE BODY OF AN EMAIL—DO NOT PRINT A HARD COPY!

OD & DOD MEETING REQUEST FORM

Briefing

1. Please schedule for
   OD? __X__
   DOD? _____

2. Suggested title for the Subject line of the meeting

   Anti-circumvention provision in the proposed steam-electric ELGs

3. Purpose of the meeting

- Request for a meeting between EPA and GE regarding the proposed ELGs for the steam electric power generating industry. In particular, GE has a discrete but operation-critical issue regarding application of the anti-circumvention provision in the proposed rule.
- The concern is around the operation of Homer City Generating Station and the reuse/recycling of wastewater streams internally when there will be no discharge to the environment. Homer City, in its public comments submitted on September 20, 2013, discussed the issue in general (starting page 6, attached document). In addition, we reference the specific language in TVA's comments that discusses how the proposed anti-circumvention language is in conflict with the reuse scenario that Homer City is contemplating. The document link is below, and the language is on page 17: "The proposed ELG condition of having to meet limits prior to use in any other process discourages some opportunities for outright discharge elimination which conflicts with the stated goals of the Clean Water Act. For example, some facilities might opt to use a wet scrubber's discharge as reagent make-up for a new dry scrubber in an integrated design which would essentially evaporate the wet FGD wastewater stream. EPA's proposed requirement to meet limits prior to use in any other process would make that prudent treatment path less attractive." [Underline mine]

TVA: http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OW-2009-0819-4607

- We would appreciate the opportunity to discuss this issue with you and your team prior to the transmittal of a final rule package to OMB.

4. Does your Division Director know you're asking for this meeting?
   Yes.

5. Date and time requested.
   June 24, 2015 from 10:00 AM to 11:00 AM (1 hr.)

6. Invitees
   Who should be invited as Mandatory? Betsy Southerland, Colin Enssle, Lynn Zipf, Rob Wood, Jan Matuszko, and Ronald Jordan

7. Additional Information

8. For more information about this request, please contact

POC: Colin Ensslle (Ex. 6 - Personal Privacy

From: Martin, Jeanette
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM
od-meetingrequest.Steam Electric ELG_Colin Enssle.docx_06_24_15.docx

PLEASE CUT AND PASTE INTO THE BODY OF AN EMAIL—DO NOT PRINT A HARD COPY!

OD & DOD MEETING REQUEST FORM

Briefing

1. Please schedule for
   OD? __X__
   DOD? _____

2. Suggested title for the Subject line of the meeting

   Anti-circumvention provision in the proposed steam-electric ELGs

3. Purpose of the meeting

- Request for a meeting between EPA and GE regarding the proposed ELGs for the steam electric power generating industry. In particular, GE has a discrete but operation-critical issue regarding application of the anti-circumvention provision in the proposed rule.
- The concern is around the operation of Homer City Generating Station and the reuse/recycling of wastewater streams internally when there will be no discharge to the environment. Homer City, in its public comments submitted on September 20, 2013, discussed the issue in general (starting page 6, attached document). In addition, we reference the specific language in TVA's comments that discusses how the proposed anti-circumvention language is in conflict with the reuse scenario that Homer City is contemplating. The document link is below, and the language is on page 17: "The proposed ELG condition of having to meet limits prior to use in any other process discourages some opportunities for outright discharge elimination which conflicts with the stated goals of the Clean Water Act. For example, some facilities might opt to use a wet scrubber's discharge as reagent make-up for a new dry scrubber in an integrated design which would essentially evaporate the wet FGD wastewater stream. EPA's proposed requirement to meet limits prior to use in any other process would make that prudent treatment path less attractive." [Underline mine]

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8. For more information about this request, please contact

POC: Colin Ensslle Ex. 6 - Personal Privacy

From: Shapiro, James (GE Capital)
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Accepted: FW: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM

From: Freedman, Jon B (GE Power & Water)
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Accepted: FW: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM

From: Fitzpatrick, Michael (GE Corporate)
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Accepted: FW: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM

From: Enssle, Colin (GE Power & Water)
Location: DCRoomWest5233B/DC-CCW-OST
Importance: Normal
Subject: Accepted: Steam-Electric ELGs
Start Date/Time: Wed 6/24/2015 2:00:00 PM
End Date/Time: Wed 6/24/2015 3:00:00 PM

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